Electronics index

Volume 41, 1968

NOTES: EA (Electronics Abroad); ED (Editorials); EI (Electronics International); ER (Electronics Review); NP (New Products)

AMPLIFIERS

Active filters ER p. 45 Feb. 19
Active filters: Part 5 Applying the operational amplifier p. 98 Dec. 9
Amplifier bridges cost-specs gap NP p. 176 Jan. 8
Amplifier flattens ripple in d-c regulator p. 106 Apr. 15
Amplifier not bothered by 100°C change NP p. 235 Aug. 5
Amplifying data without noise NP p. 156 Feb. 5
Beyond microwave IC's—new technique called praetersonics ER p. 66 Nov. 11
Boosting color tv's i-f performance p. 130 Mar. 4
Boosting op-amp output with two transistors p. 110 June 10
Bootstrapping bias supply increases IC voltage capacity p. 90 Oct. 28
Bridge amplifier provides isolation p 83 Sept. 30
Bridge and amplifier monitor d-c level p. 99 June 24
Corrected version p. 71 Sept. 2
Designers beat 3-way stretch NP p. 191 Mar. 18
Differential amplifier governs magnetic brakes and clutches p. 75 May 13
Differential amplifier uses two IC's p. 120 Nov. 11
Doubling-up IC amplifiers makes sense NP p. 217 Jan. 8
Dynamic tests for op amps use synchronous modulation p. 118 Aug. 5
80-watt amplifier covers 225 to 400 Mhz NP p. 115 Dec. 23
Everything—including sink—in one package NP p. 211 Feb. 19
FET and IC keep oscillator linear p. 84 Aug. 19
Full compensation added to op amps NP p. 184 May 27
Giving IC op amps a powerful boost NP p. 154 Feb. 5
Great Britain: Cooling with gas—parametric amplifier EA p. 245 May 27
Great Britain: Sound thought—preamplifier for hi-fi EI p. 309 Nov. 11
Grounded-base amplifier mates npn to pnp p. 89 Feb. 5
High-precision preamp built from 3 transistors p. 58 Dec. 23
IC audio amplifier puts out 5 watts NP p. 111 Nov.25
IC op amp compressed into flatpack NP p. 115 Nov. 25
IC's poaching on op amp preserves NP p. 109 Apr. 29
Integrating agc ER p. 46 Feb. 5
Isolated success—dielectric isolation technique for developing linear IC operational amplifier ER p. 44 Jan. 22
Japan: Big gainer—IC i-f amplifiers EA p. 146 Apr. 29
Japan: Steady gains—Hybrid IC amplifier for S band EI p. 147 Nov. 25
Linear IC's: Part 6 Compensating for drift p. 90 Feb. 5
Low-distortion limiter uses IC operational amplifier p. 120 Oct. 14
Low-drift op amp for less NP p. 181 May 27
Modulating current supplied by op amp p. 107 Aug. 5
Op amp boosts pick-up voltage p. 108 Aug.5
Op amp combines squelch and agc .NP p. 209 June 10
Operational amplifier simulates inductance p. 99 Sept. 16
Operational amplifier with four transistors in the input stage—high-gain transistors ER p. 54 Nov. 11
Optics aid pulse amplifier NP p. 132 Apr. 29
Power circuits key to trim package NP p. 157 Aug. 19
Process trainer gives operators true picture p 131 Jan. 22
Protecting data from the ground up p. 58 Apr. 29
The 709 gets a high-speed successor NP p. 95, 177 June 24
Splendid isolation—dielectric approach yields premium, competitive op amp NP p. 187 Feb. 5
Squelch gate reduces amplifier's standby gain p. 83 Dec. 9
Stripped for action—magnetic amplifier uses a zener diode in place of the demodulator ER p. 32 Apr. 1
30-Ghz amplifier has 600-Mhz bandwidth NP p. 149 Sept. 2
Too-fast converter finds its niche NP p. 242 Aug. 5
Transistor replaces resistor and improves amplifier p. 92 Jan. 8
Uncoiling r-f amplifiers ER p. 39 Mar. 4
UJT protects op amp from voltage transients p. 83 Nov. 25
Voltage comparator is made with op amps and logic gates p. 91 July 8
Wescon preview: IC testers, op amps star p. 191 Aug. 5
Tester takes to any op amp p. 192 Aug. 5
Improving on the 709 p. 195 Aug. 5
Wideband amplifier has 2 magnetrons NP p. 198 Mar. 18

ANTENNAS

Australia: Five-array antenna for Post Office EA p. 249 Jan. 8
Great Britain: Clearing the dishes—Cassegrain antenna EA p. 255 June 10
Great Britain: Good steer—wideband steerable arrays EA p. 145 Apr. 1
Hong Kong: Tailoring antennas EA p. 318 Mar. 4
Motor gives reverse twist to the intelsat 3 antenna p. 71 Apr. 1
Sighting in on narrow light beams p. 106 Mar. 18
Solid state radar—Half step ER p. 43 May 27
Way up there—log-periodic dipole antenna ER p. 60 Oct. 14
West Germany: Ghost chaser—tv antenna will have a unique radiation pattern EA p. 270 Aug. 5

ASTRONOMY

East Germany: New stage for stars EA p. 147 Apr. 1
Radio Astronomy Explorer (RAE-A) ER p. 50 July 22

AUTOMOTIVE

Back on the road—highway traffic control research site ER p. 62 Aug. 5
Computerized automobile diagnostic centers ER p. 50 July 22
Devices meter auto pollutants NP p. 244 Nov. 11
Electronic traffic control: can it make the grade? p. 137 Apr. 15
France: Freeing the freeway—analyzer spots bottlenecks as fast as they develop EA p. 247 Jan. 8
Impatt impact—microwave radar "trap" ER p. 37 Apr. 29
Japan: Data-transmission network to handle auto registrations EA p. 172 Sept. 2
Japan: New way to skin a cat—bulldozer remote control for untrained operators EA p. 277 Apr. 15
Keeping in touch—program called Pulse ER p. 60 Nov. 11
Lots of radio on just one IC p. 124 Aug. 5
Monitor warns of car light that fails NP p. 213 Sept. 16
Sorting out the tires p. 125 Mar. 18
Treading softly—computer weeds out defective tires and grades acceptable ones ER p. 50 Feb. 19
West Germany: Feeling the heat—system measures the temperature of engine pistons EI p. 146 Nov. 25
West Germany: Fixing the brake—electronic antiskid system EI p. 271 Oct. 14
West Germany: In a scrape—radio-controlled scoop loader for radioactive debris EA p. 211 Feb. 5
West Germany: Road test—Daimler-Benz test track loaded wtih electronics EA p. 196 Jan. 22
West Germany: Top grade—grader has Nivomatic blade-control system EA p. 247 Jan. 8

AVIONICS

Accelerometer has cut-rate price NP p. 185 June 10
Aeronautical Services Satellite—Breaking the logjam ER p. 48 May 27
Aeronautical Services Satellite—Speculative proposal ER p. 44 Sept. 2
Air Force malfunction system—First AIDS ER p. 50 May 27
Air Force plans new weather monitor p. 151 June 24
Air traffic control: the waiting game p. 111 Sept. 2
Airborne military transceiver finds room in crowded spectrum p. 133 Apr. 15
Airbus makers go two ways on avionics p. 157 Aug. 5
Airplane altimeter goes all-electric NP p. 168 July 8
Altitude alert ER p. 62 Sept. 16
. . . and reacting faster—MAP system cuts a pilot's reaction time ER p. 40 Jan. 22
Australia: New approach for glide path arrays EA p. 255 Mar. 18
AWACS wins approval—Crisis of identity ER p. 54 Sept. 30
CAT by the tail ER p.44 Apr. 29
Dash dashed ER p. 74 Nov. 11
Designers up in air over specs p. 165 Sept. 16
Discretionary LSI: airborne digital computer ER p. 47 June 24
Done with magnets—magnetic fluid accelerometer ER p. 54 Mar. 18
Doppler navigation system is redesigned from a to d p. 78 July 22
Electronics Markets 1968: Aviation's growth sends 1968 prospects soaring p. 120 Jan. 8
Entertainment system for DC-10 ER p. 56 Dec. 9
FAA priorities irk critics p. 155 Feb. 19
FAA readies new checkout system p. 127 Feb. 5
Flight control—electronic systems for the SST ER p. 64 Aug. 5
Follow the bouncing ball—non-mechanical inertial reference instrument ER p. 58 Oct. 14
France: Inside job—high-frequency transceiver EA p. 163 July 22
Geiger fuel gauge for aircraft ER p. 72 Nov. 11
Great Britain: Missing link—quadruplicated control system EA p. 164 July 22
Great Britain: Sharper look—transponders' market EI p. 212 Sept. 30
Great Britain: Thin solar cells EI p. 145 Nov. 25
Guidance for $2,000—computer to guide an air-to-surface missile ER p. 52 Nov. 25
Height of sophistication in in-flight monitoring * p. 78 May 13
High lighting: electroluminescent panels for aircraft ER p. 46 June 10
Image-intensifying electronic devices' study —Getting the picture . . . ER p. 39 Jan. 22
International: Aerospace tutorial—NATO's Advisory Group for Aerospace R&D EA p. 246 May 27
Italy: Landing system instruments ordered EA p. 249 May 27
Luxembourg: Institute to train air-traffic-control specialists EA p. 249 Jan. 8
Making a point: digital airborne computers use floating-point arithmetic ER p. 48 June 10
Mexico: One umbrella—a nationwide air-traffic control system EI p. 210 Sept. 30
Modular air computer ER p. 44 May 27
Module tester will help speed repairs on aircraft navigation and radio equipment ER p. 60 June 24
Multiplexing the LSI way—telemetry module ER p. 45 June 10
Navigation converter talks two languages—computer device NP p. 151 Feb. 5
Netherlands: computer—controlled "Airlord" EA p. 164 July 22
Night sight ER p. 56 Aug. 19
Outside wiring—new approach to discretionary wiring ER p. 47 June 24
Potential of phased-array radar spurs increasing R&D activity p. 94 Sept. 2
A question of priority ER p. 52 Mar. 18
Radar system—Happy landings ER p. 48 Apr. 29

RCA's integrated very-high-frequency omni-range and instrument landing system ER p. 48 Sept. 30
Real-time reservation—computerized reservation system ER p. 51 Aug. 5
Recorded voice alerts pilots NP p. 171 Feb. 19
Simulators go to the head of the class p. 163 Apr. 15
SST multiplexing ER p. 58 June 24
Standing up to abuse—IC operates on 28 volts ER p. 55 Oct. 14
Sweden: Automatic tester checks Viggen electronics EA p. 148 Apr. 1
Systems engineering for the airlines ED p. 31 Aug. 5
TFX—Back to the drawing board ER p. 60 Apr. 15
Talking by the numbers ER p. 44 Dec. 23
Testing on the wing p. 81 Apr. 29
Touching down—helicopter landing system ER p. 48 June 24
Vibrating angular rate sensor may threaten the gyroscope p. 130 June 10
A weight saver for jumbo jets NP p. 232 Nov. 11
West Germany: Back in the air EA p. 172 Sept. 2
West Germany: Double coverage—air traffic control radar EA p. 260 June 10
West Germany: Fit to be tied—kibitzing capsule for electronic gear EA p. 276 Apr. 15
West Germany: Glide guide—Setac landing equipment EA p. 161 July 22
West Germany: Low ceiling EA p. 198 May 13
West Germany: A sad Red Baron EI p. 308 Nov. 11

BUSINESS

Age of protest—computer manufacturers challenge Air Force on contract award ER p. 48 Jan. 8
Airbus makers go two ways on avionics p. 157 Aug. 5
All-purpose scapegoat ED p. 23 Jan. 8
Australia: AWA will develop and produce IC's EA p. 261 June 10
Automation: good barometer for markets ED p. 31 Dec. 23
Bell Canada's R&D arm, Northern Electric, develops reach p. 125 May 13
British invade a common market NP p. 216 Mar. 4
Business and the urban crisis—McGraw-Hill special report p. C1-C16 Feb. 5
A case of self-deception ED p. 31 Sept. 2
Control Data Corp.'s preliminary agreement to acquire Electronic Associates Inc. ER p. 56 Mar. 4
Control Data Corp. sales ER p. 56 Feb. 5
Copying may not work ED p. 23 Mar. 18
Data Automation Co. buys 45% interest in Carterphone Communications Corp. ER p. 56 Dec. 9
Election issues for electronics p. 139 Oct. 28
EIA—Soaring sales ER p. 60 Mar. 18
Electronics Markets 1968 p. 101 Jan. 8
State of the mart: gains slowed by war priorities p. 105 Jan. 8
The prospects are solid p. 109 Jan. 8
Growing—but still in the incubator (medical electronics) p. 113 Jan. 8
A funny thing happened on the way to prosperity (television) p. 114 Jan. 8
Computer-assisted instruction stepping up in class p. 116 Jan. 8
Growth rate a Vietnam casualty p. 118 Jan. 8
Aviation's growth sends 1968 prospects soaring p. 120 Jan. 8
Too hot not to cool down? (computers) p. 123 Jan. 8
Signal gains in store for 1968 (communications) p. 126 Jan. 8
Still tied to Pentagon purse strings (microwave) p. 129 Jan. 8
The fiscal squeeze tightens (space electronics) p. 130 Jan. 8
New member of the billion-dollar club (industrial electronics) p. 132 Jan. 8
Selective gains for the resourceful (components) p. 135 Jan. 8
Europe: Fairchild readying a new assault on market EI p. 202 Dec. 9
European electronics markets: 1969-report p. 65 Dec. 23
It's got to be good p. 71 Dec. 23
West Germany p. 72 Dec. 23
United Kingdom p. 76 Dec. 23
France p. 79 Dec. 23
Italy p. 81 Dec. 23
Sweden p. 83 Dec. 23
The Netherlands p. 85 Dec. 23
Belgium p. 86 Dec. 23
Switzerland p. 87 Dec. 23
Spain p. 88 Dec. 23
Denmark p. 89 Dec. 23
Norway p. 90 Dec. 23
Fairchild Camera & Instrument Corp. to sell its memory-products group to Data Products Corp. ER p. 56 Feb. 5
Fairchild shakeup ER p. 52 July 8
C. Lester Hogan, new president and chief executive officer ER p. 45 Aug. 19
Fairchild-Motorola Act Two ER p. 40 Sept. 2
Fairchild vs. Motorola ER p. 60 Sept. 16
Hogan takes hold at Fairchild p. 119 Sept. 30
Fairpak finale ER p. 58 Nov. 11
Federal budget—An uncertain guide for suppliers p. 137 Feb. 19
France: CSF trims down EA p. 224 July 8
France: Gathering clouds EI p. 199 Dec. 9
France: Hard times EA p. 256 June 10
France: Powerful partner—government acquires one-quarter holding in CFT EA p. 193 Jan. 22
French firm enters U.S. market for nuclear instrumentation p.157 May 27
From another Iron Mountain—"Technological innovation in civilian public areas" ED p. 23 Jan. 22
GE—Deficit mending ER p. 38 Apr. 29
General Precision Equip. Corp. merger with Singer Ge. proposed ER p. 44 May 13
Good business: an international approach ED p. 31 July 22
Great Britain: Comeback for Dynatel Ltd. EA p. 185 Aug. 19
Great Britain: The taxman cometh EA p. 145 Apr. 1
Heading toward a record ED p.23 Jan. 8
Hewlett-Packard vs. GAO, continued ER p. 50 Feb. 5
Honeywell Inc. will move the operations of its Test Instruments division ER p. 66 June 10
Indonesia: East is east—and cheaper EI p. 309 Nov. 11
International: Entrenched privilege—moves to cut the outflow of capital from the U.S. may have little impact on overseas plant investments EA p. 197 Jan. 22
IBM: Federal Center broadens horizons p. 145 June 24
International outlook ED p. 31 Sept. 30
Italy: Elsi plant to be run by STET EI p. 206 Dec. 9
Italy: Raytheon-Elsi decision near EA p. 237 Sept. 16
Japan: Ending to its four-year-long hassle with TI EA p. 200 May 13
Japan: Giant chasers EA p. 205 June 24
Japan: Matsushita Electrical Industrial Co's subsidiary in Australia EA p. 257 Mar. 18
Japan: NTT ordered to punish the engineers who designed the repeater stations EA p. 261 June 10
Laser Systems Corp. purchases Lear Siegler Inc.'s Laser Systems Center ER p. 66 June 10
Life or death at Sperry Gyroscope ER p. 62 July 8
LMI report: a little knowledge ED p. 23 Apr. 15
Moving into ghettos ER p. 45 May 27
Name dropping—Sen. Proxmire plans to disclose which companies have substantial government-owned equipment and which have been misusing the equipment ER p. 48 Jan. 8
The other jobs were easy ED p. 23 Feb. 5
Philco-Ford—Robert Hunter, top man ER p. 62 Oct. 14
RCA sells medical electronics agreement back to Hoffmann-LaRoche ER p. 56 Sept. 30
Russia—an open market p. 126 Dec. 9
Sales leadership: new optimism at two companies ER p. 38 May 13
Singer Co. and General Precision Equipment Corp. merger agreement ER p. 64 May 27
Solitron Devices Inc. moves to take over Amphenol ER p. 54 Mar. 4
Soviet Union: Contract with the Italians for computer peripheral equipment EI p. 272 Oct. 14
Soviet Union: Getting a ruble's worth EI p. 310 Nov. 11
Spain: Brave new band—export drive EA p. 209 June 24
Sperry Rand getting out of semiconductor business ER p. 48 Jan. 22
Stop-loss order ER p. 60 Oct. 28
Tenneco Inc. will sell Watkins-Johnson Co. ER p. 56 Mar. 4
TRW Inc. will take control of Clevite Corp. ER p. 64 May 27
Tyco Labs. Inc. to purchase Digital Devices Inc. ER p. 66 June 10
Unpackaged chips market picks up ER p. 47 Apr. 15
Value engineering: getting your money's worth p. 31 July 8
War puts agencies on short rations p. 151 Feb. 19
Watchdog at bay—Government's Renegotiation Board under industry attack again ER p. 42 Jan. 22
West Germany: Mating game EA p. 211 Feb. 5
West Germany: Quick recovery EI p. 308 Nov. 11
West Germany: Saba GmbH and GT&E merger EA p. 321 Mar. 4
West Germany: Siemens AG moving up on IBM EA p. 223 July 8
Zenith suit ER p. 66 June 10

CAPACITORS

Capacitor slows down stabilized power supply p. 123 Nov. 11
Chip capacitors tested automatically NP p. 217 June 10
French chip in leadless capacitors NP p. 128 July 22
One capacitor makes IC a pulse-width modulator p. 71 Sept. 2
Resonance effects yield in-circuit capacitance checks p. 119 Oct. 14
Rule of thumb for ripple calculations p. 87 Aug. 19
Single-sheet capacitors NP p. 214 Aug. 5
Transistor and relay regulate high voltages p. 70 July 22
Wescon preview: IC testers, op amps star p. 191 Aug. 5
This dielectric keeps it cool p. 207 Aug. 5

COLOR TELEVISION

Austria: Color tv production center EI p. 272 Oct. 14
Boosting color tv's i-f performance p. 130 Mar. 4
Camera focuses on low cost NP p. 195 July 8
CBS nominates a convention hopeful—lightest portable color tv camera p. 74 Aug. 19
Color-tv demodulator goes IC NP p. 221 June 10
Color tv display system suitable for use as a studio monitor ER p. 65 Apr. 15
Color tv scores big gains with small screens p. 136 June 10
Doing it in color—all-solid state color models p. 107 June 24
Dusting process brightens picture NP p. 192 Mar. 18
Electronics Markets 1968: Selective gains for the resourceful p. 135 Jan. 8
Finland: PAL color tv system adopted EA p. 321 Mar. 4
France: Broken color line EA p. 236 Feb. 19
Graphite coatings are hard and porous NP p. 230 Nov. 11
Great Britain: Mortal coils—etched coils for scanning deflection EA p. 238 Sept. 16
Great Britain: Reins damp tv outlook EI p. 146 Nov. 25
Japan: Color it otherwise—"separated white" concept could lead to practical successors to the shadow-mask tube EA p. 194 Jan. 22
Japan: Color tv sales EA p. 249 Jan. 8
Japan: Facsimile palette—still color photos by facsimile EA p. 257 June 10
Japan: Telechromatic — color-facsimile transmissions EA p. 193 Jan. 22
Japan: Three-shot gun—Trinitron EA p. 145 Apr. 29
MOS IC's process color video signals NP p. 133 July 22
One-tube color camera ER p. 47 Dec. 9
others go solid—component producers pushing for tubeless tv ER p. 56 July 8
Portable color cameras in the picture NP p. 133 May 13
Radiating worry ER p. 56 Apr. 15
Radiation standards ER p. 52 Oct. 28
Setting the stage for flat-screen tv p. 92 Apr. 15
Corrections p. 228 May 27
Shortcuts in tv camera design make for big cuts in price p. 134 Nov. 11
Silicon power transistor for color tv sets ER p. 58 June 24
Slide view—color tv system that can screen color slides ER p. 42 May 13
Some push tubes —RCA offering nine-pin miniature tubes; GE pushes its Compactron tubes ER p. 54 July 8
Soviet Union: Color tv behind schedule EI p. 206 Oct. 28
Toward tubeless tv—high-voltage rectifier ER p. 42 Mar. 4
West Germany: Fading color line EA p. 258 June 10

COMMUNICATION SATELLITES

Aeronautical Services Satellite—Breaking the logjam ER p. 48 May 27
Aeronautical Services Satellite—speculative proposal ER p. 44 Sept. 2
APT to grow ER p. 58 May 27
ATS-F—loaded mission p. 103 Dec. 23
Bridging the gap—role of the military satellites ER p. 64 July 8
Canada: Bouchette, earth station EI p. 272 Oct. 14
Canada: Domestic satellite ruffles feathers EA p. 239 Sept. 16
Canada: Satellite in sight EA p. 277 Apr. 15
Central America: regional two-satellite communications network EI p. 148 Nov. 25
Comsat gains ER p. 74 Nov. 11
Great Britain: Goonhilly Downs station will be rebuilt EA p. 249 May 27
Great Britain: "Skynet" military communications satellite network contract EA p. 320 Mar. 4
Growing flock of birds ER p. 56 Mar. 18
Intelsat 3 antenna—motor gives reverse twist p. 71 Apr. 1
Intelsat 4 countdown nears zero p. 139 June 24
Intelsat 4: Fourth generation ER p.68 Oct. 14
Kenya: First commercial communications satellite ground station in Africa EA p. 321 Mar. 4
LES-6 Communication satellite ER p. 52 Sept. 30
NASA selects GE and Fairchild to carry out parallel design studies for Applications Technology Satellites F and G ER p. 56 Sept. 30
Nimbus B will be replaced ER p. 50 July 22
Philippines: Satellite communication ground station EA p. 262 June 10
Photo finish—Comsat and Intelsat 3 race for Olympic Games ER p. 64 Sept. 16
A single voice — Task Force suggests Comsat serve as the nucleus of a new company that would take over the international transmission facilities of all existing U.S. carriers ER p. 58 Nov. 25
Soviet Union: Network for socialist countries EA p. 248 Jan. 8
Spain: Telephone network will extend direct dialing to European countries in '69 EA p. 249 May 27
Symphonie satellite—Fiddling with Symphonie ER p. 46 Apr. 29
Tacsat: big bird ER p. 44 May 27
Unspun—gravity-gradient system may limit the life of ATS-D ER p. 48 July 22

COMMUNICATIONS

ARPA network will represent integration on a large scale p. 131 Sept. 30
Airborne military transceiver finds room in crowded spectrum p. 133 Apr. 15
AT&T has asked the FCC to require the use of a protective device between non-Bell equipment and phone lines ER p. 55 Sept. 16
Band splitting ER p. 56 Feb. 19
Canada: Fixed positions—hydrographic survey system EA p. 222 July 8
Car 54—Where are you?—mobile radio power transistor NP p. 186 Feb. 5
Car 54, wgbfr akl yih?—police fight eavesdropping NP p. 125 Sept. 2
Channel sharing ER p. 52 Mar. 4
Circulator suppresses echoes in 4-Ghz band NP p. 179 Sept. 30
Cleaning the spectrum ER p. 54 Feb. 19
CBS nominates a convention hopeful—lightest portable color tv camera p. 74 Aug. 19
"Competition is good . . . sometimes" ED p. 31 Dec. 23
CAI edges slowly into the classroom p. 163 Aug. 5
Converter handles high-speed-spin signals NP p. 238 Aug. 5
Cutting noise in data sampling p. 70 May 13
Different type—adapting a typewriter to a computer ER p. 58 Aug. 5
Elbow room—recommendations about what to do to relieve the crowded frequency spectrum ER p. 56 Aug. 5
Electronics Markets 1968: Signal gains in store for 1968 p. 126 Jan. 8
Every data bit counts in transmission cleanup p. 77 Jan. 22
Fast talk ER p. 56 June 10
FCC begins to get the message p. 153 Jan. 8
FCC contract to Stanford for communication research ER p. 50 July 22
Federal libraries cast a long shadow p. 123 July 8
Ferrites' attraction is magnetic and growing p. 104 Oct. 14
France: Carpitron tube sold for use in Brittany's Intelsat 3 ground stations EI p. 136 Dec. 23
France: Inside job—high-frequency transceiver EA p. 163 July 22
France: Lowdown—new low-level altimeter EA p. 185 Aug. 19
France: The right address—address generator EA p. 271 Aug. 5
Great Britain: Asbestos-like plastic for new pivot assembly EA p. 261 June 10
Great Britain: Bulldog spirit EA p. 317 Mar. 4
Great Britain: Comeback for Dynatel Ltd. EA p. 185 Aug. 19
Great Britain: Gem of a delay EA p. 254 Mar. 18
Great Britain: IC to change college curricula EA p. 207 June 24
Great Britain: Magnetic modulator EA p. 237 Feb. 19
Great Britain: Out of the trunk—mobile transceiver the size of an ordinary car radio EI p. 206 Oct. 28
Great Britain: Unto the breach—line flyback period used for audio EI p. 211 Sept. 30
Ground-station market flies high p. 105 Nov. 25
Hands-off attitude—regulating teleprocessing ER p. 40 Dec. 23
Hungary: Communications network improvement program EA p. 321 Mar. 4
Illinois Central RR's 800-mile microwave radio communications system ER p. 56 Mar. 4
Italy: microwave link EI p. 136 Dec. 23
Italy: Unkind cut—telephone monitor cuts off long-distance calls EA p. 280 Apr. 15

Japan . . and diodes today for millimeter-wave phone setup EI p. 210 Sept. 30
Japan: Double talk—two phone conversations on one line EA p. 235 Sept. 16
Japan: Facsimile palette—still color photos by facsimile EA p. 257 June 10
Japan: Fast check—nationwide check-clearing facility EA p. 162 July 22
Japan: Improving a loser— glass fiber promises less signal noise EI p. 133 Dec. 23
Japan: Mitey mike—electret capacitor microphone EI p. 133 Dec. 23
Japan: On call—DEX-II exchange EA p. 161 July 22
Japan: Steady gains—Hybird IC amplifier for S-band EI p. 147 Nov. 25
Japan: Telechromatic — color-facsimile transmissions EA p. 193 Jan. 22
Japan: Topics (total on-line program and information control system) EI p. 205 Oct. 28
Japan: Twice the fax EI p. 201 Dec. 9
Japan: Wave of the future . . millimeter-wave phone experiment EI p. 209 Sept. 30
Keeping in touch—program called Pulse ER p. 60 Nov. 11
Keyboard with Ascii output costs $500 NP p. 201 June 10
Laser series III Light wave of the future: optical pcm p. 123 Sept. 16
Latin America: Conference call—telecommunications network EA p. 184 Aug. 19
Loran receiver—new role planned NP p. 168 Aug. 19
Los Angeles Police Dept. contract for facsimile identification network ER p. 56 Feb. 5
Lots of radio on just one IC p. 124 Aug. 5
Luxembourg: broadcast station EA p. 214 Feb. 5
Mexico: One umbrella—a nationwide air-traffic control system EI p. 210 Sept. 30
Mexico nears finish line in the first Olympic event p. 95 Apr. 1
Multiplexing the LSI way: telemetry module ER p. 45 June 10
Opening up the spectrum ER p. 68 Nov. 11
Op amp combines squelch and agc NP p. 209 June 10
Pioneer D: convolutional coding technique cuts errors ER p. 36 Apr. 1
Portable telephone always gets call NP p. 218 Mar. 18
Power-line filters need specific specs p 112 June 24
Project Mallard: for the birds ER p. 54 Feb. 19
Receiver tuned to needs of new nations NP p. 216 Mar. 18
Ring up a computer ER p. 52 July 8
Saving money on data transmission as signals take turns on party line p. 119 Apr. 15
School work—experimental computer-assisted instruction system has conventional tv sets and pushbutton telephones ER p. 56 Feb. 5
Security guard system uses magnetically encoded ID cards ER p. 63 Apr. 15
Sighting in on narrow light beams p. 106 Mar. 18
Signal analysis with a 20-hertz bandwidth NP p. 228 Aug. 5
A single voice—Task Force suggests Comsat serve as the nucleus of a new company that would take over the international transmission facilities of all existing U.S. carriers ER p. 58 Nov. 25
Sound out of sight—Portamike ER p. 61 May 27
Space transmission method uses electric-optic crystal ER p. 47 Aug. 19
Spain: Telephone network will extend direct dialing to European countries in '69 EA p. 249 May 27
Speeding diplomacy's messages—ITT system for State Department p. 173 June 10
SST multiplexing ER p. 58 June 24
A switch for the teletypewriter market NP p. 158 Feb. 5
Sylvania would rather switch—tactical telephone exchange p. 119 Aug. 19
Taking noise out of weak signals p. 80 July 8
Talking by the numbers ER p. 44 Dec 23
Taming the CO_2 laser ER p. 54 Apr. 15
Too-fast converter finds its niche NP p. 242 Aug. 5
Transmission of weather maps over ordinary telephone lines with isographic plotter ER p. 38 Apr. 1
Tuning bar replaces radio dial NP p. 185 Jan. 8
Uhf triodes aim to plant tricolor NP p. 167 Feb. 5
Unjamming the spectrum ED p. 23 Mar. 18
Wave of optimism for millimeter waves p. 151 Mar. 18
West Germany: Bright tune—tuning-indicator circuit for stereo receiver EA p. 246 Jan. 8
West Germany: Fax afield—portable facsimile EA p. 208 June 24
West Germany: System that transmits still images over standard telephone lines EA p. 248 May 27
West Germany: Tunnel talk EA p. 316 Mar. 4
Yugoslavia: Ground station designed to link with satellite for telephoning EI p. 272 Oct. 14

COMPUTERS

Active filters see Filters
Adder on a chip: LSI helps reduce cost of small machine p. 119 Mar. 18
ARPA network will represent integration on a large scale p. 131 Sept. 30
Australia: Information Electronics Ltd. first Australian-owned computers company EA p. 164 July 22
Australia: Japanese computer maker in Sydney EA p. 249 Jan. 8
Automated technician ER p. 60 May 27
Automating all along the line p. 88 Nov. 25
Average-as-you-go computer bows NP p. 194 Feb. 19
Blowup—details from a crt ER p. 37 Dec. 23
Bowling-Pin money: computerized scoring for bowling ER p. 46 Jan. 22
British challenger uses big words NP p. 180 Feb. 19
Budget-price magnetic-tape transport NP p. 173 July 8
Calculating on MOS—off-line peripherals for clerical functions ER p. 48 Sept. 30
Census Bureau depends on electronics to make its 1970 national nose count p. 103 July 22
A challenge from the power industry ED p. 31 Nov. 11
Circular words ER p. 48 June 24
Computer-aided design
Part 13: Defining faults with a dictionary p. 64 Jan. 22
Part 14: Start with a practical IC model p. 94 Mar. 4
CAI edges slowly into the classroom p. 163 Aug. 5
Computer-oriented system speeds testing of circuits and components p. 72 July 22
Computer program club ER p. 46 Sept. 2
Computer with peripherals will rent for $40 a month NP p. 193 Oct. 14
Coupler makes many matches NP p. 266 Nov. 11
Cranking out masks—computer-controlled masking camera does step-and-repeat work ER p. 38 Jan. 22
Czechoslovakia: Computers now operating EA p. 262 June 10
Czechoslovakia: Gamma 140 computer EA p. 200 May 13
Czechoslovakia: Head of the class—teaching machine EA p. 205 June 24
Data banks overdrawn ER p. 53 Feb. 19
Data converter accepts 20 channels NP p. 119 Dec. 23
Data recorder has light touch NP p. 260 Nov. 11
Data services ER p. 46 Sept. 2
Data system for thin purses NP p. 117 Apr. 1
Deficit mending at GE ER p. 38 Apr. 29
Design-a-day channel filter—computer-aided technique NP p. 191 Jan. 8
Diagnostic computer programs make TTC-(X) maintenance easier p. 122 Aug. 19
Different type—adapting a typewriter to a computer ER p. 58 Aug. 5
Digital comparator: smoothing difference signals for control NP p. 165 Sept. 30
Discretionary LSI—airborne digital computer ER p. 47 June 24
Doppler navigation system is redesigned from a to d p. 78 July 22
Double thinking—dual environment ER p. 64 June 10
Down the drain—joint calculator venture dropped ER p. 66 July 8
Drafting computers ER p. 44 Mar. 4
Drawing on computers ER p. 39 Mar. 4
Dual on line ER p. 56 Feb. 19
East Germany: Computer craze ER p. 198 May 13
Electronic traffic control: can it make the grade? p. 157 Apr. 15
Electronics Markets 1968: Computer-assisted instruction stepping up in class p. 116 Jan. 8
Electronics Markets 1968: Too hot not to cool down? p. 123 Jan. 8
An emerging solution ED p. 23 May 27
Fast-computer market at stake in emitter-coupled logic race NP p. 109 Dec. 23
FFT—shortcut to Fourier analysis p. 124 Apr. 15
FFT hardware: the time-saver p. 92 June 24
Federal libraries cast a long shadow p. 123 July 8
First with the fastest—Motorola will soon offer this large-scale integrated eight-bit adder ER p. 46 Apr. 15
France: The right address—address generator EA p. 271 Aug. 5
France: Travelers' check—magnetic-card system EA p. 163 July 22
GSA scheme for cutting data-transmission costs ER p. 44 May 13
Going overboard—sea reading ER p. 50 June 24
Graphics may return control to the engineer ED p. 31 Aug. 5
Graphics terminal displays attractive figure: under $10,000 NP p. 141 Dec. 9
Great Britain: Changing stations—computers will handle the computations needed to simulate reactor characteristics EA p. 271 Aug. 5
Great Britain: Computer combine EA p. 146 Apr. 1
Great Britain: Computer quiz EA p. 222 July 8
Great Britain: Logic choice—TTL packages in ICT's new processors for small- and medium-size computers EA p. 195 Jan. 22
Guidance for $2,000—computer to guide an air-to-surface missile ER p. 52 Nov. 25
Hard line on software ED p. 23 May 27
Hempstead Bank will install computerized purchasing system ER p. 56 Feb. 5
Hewlett-Packard joins the time-sharing crowd ER p. 44 May 13
Hybrid computers
I Three-way dialogue yields solutions in depth p. 86 Sept. 30
II Choosing a simulation system p. 91 Sept. 30
III Devising industrial control systems p. 132 Oct. 4
Illiac cutback ER p. 56 Oct. 14
Improving the mask-maker's image p. 78 Feb. 5
Incompatibles engaged—first time-sharing network using incompatible computers comes a step closer to reality ER p. 62 Sept. 16
Industrial control computers solve some problems, but cause others p. 129 May 27
IEEE product preview
Computer aide designed p. 201 Mar. 4
Quality combined with automation p. 210 Mar. 4
IC operation keyed to Hall effect NP p. 169 Sept. 16
International: Aerospace tutorial—NATO's Advisory Group for Aerospace R&D EA p. 246 May 27
IBM keyboard-to-magnetic-tape units ER p. 64 May 27
Italy: Computer concentration EA p. 199 May 13
Italy: Gassed up—computer simulates what goes on in gas transmission network EA p. 269 Aug. 5
Japan: Back to back—Facom 230-60 computer with two main central processors back-to-back EA p. 149 Apr. 1
Japan: Calculated move—Fujitsu adds three computers EI p. 269 Oct. 14
Japan: Calculating components—desk calculator components EI p. 148 Nov. 25
Japan: Computer to control a thermal power plant EA p. 186 Aug. 19
Japan: Fast count—desk-calculator output surges EA p. 257 June 10
Japan: Giant chasers EA p. 205 June 24
Japan: King-size cassette EA p. 254 Mar. 18
Japan: LSI calculator EI p. 307 Nov. 11
Japan: Tooling around—computerized numerical control system EI p. 270 Oct. 14
Japan: Topics (total on-line program and information control system) EI p. 205 Oct. 28
Keeping track of the action—multicolored dynamic projections speed commands or management decisions p. 92 Aug. 5
Keyboard with Ascii output costs $500 NP p. 201 June 10
Logic trainer has movable modules NP p. 145 Sept. 2
Lower-priced systems ER p. 44 May 13
Making a point—digital airborne computers use floating-point arithmetic ER p. 48 June 10
Medical literature analysis and retrieval will be upgraded and expanded to integrate and automate all the functions of the library ER p. 60 June 24
Memories
Back in action—error-correcting technique ER p. 48 Feb. 19
Buffer talks fast but keeps still NP p. 218 Apr. 15
Core assault—hybrid LSI memory ER p. 49 June 24
Cores challenged by plated wire NP p. 216 Oct. 14
Fairchild Camera & Instrument Corp. to sell its memory-products group to Data Products Corp. ER p. 56 Feb. 5
Forward march—Century Series designs include a second generation thin-film rod memory and a new disk file design ER p. 49 Mar. 18
Fruit of the loom—lower cost braider-wire memory ER p. 52 Jan. 8
Great Britain: Minding the store—Manchester will describe an integrated-circuit associative memory EA p. 272 Aug. 5
Great Britain: Through the looking glasses—optical read only memory EA p. 255 June 10
Hardy memories for the Army ER p. 42 July 22
Honeywell memory disk pact uses chromium dioxide coatings ER p. 48 Jan. 22
Japan: Finished goods—woven memories for Univac machines EA p. 236 Sept. 16
Japan: Memorable memory EA p. 245 Jan. 8
Laser encodes diode memory ER p. 37 Dec. 23
Laser recording ER p. 50 Mar. 18
Low-budget films ER p. 31 Apr. 1
Memories shot from guns p. 98 Feb. 5
Memory stacks up as a rugged item NP p. 176 July 8
MOS memory to sell for 10 cents a bit NP p. 189 Sept. 30
New terminals in display picture p. 159 Jan. 8
Nova can't lose its instructions p. 76 Dec. 9
Nova read-only storage section p. 147 Sept. 30
Opening the MOS gate—Read-only memories ER p. 45 Feb. 19
Pointing the way—positioning a read-write head ER p. 66 Oct. 14
Putting the squeeze on radar signals p. 86 Jan. 22
A quick-change braid memory NP p. 148 Dec. 9
Read-only memory uses bipolar IC's NP p. 165 Aug. 19
Remembering the MOS ER p. 38 Apr. 29
Shift registers launch MOS standard line NP p. 235 Oct. 14
Tape memory price and package trimmed NP p. 250 Nov. 11
Three-wire design speeds up memory NP p. 127 Apr. 29
Total recall on one board NP p. 144 Dec. 9
Toward MOS memories ER p. 49 Oct. 28
Unlocking memories—ceramic disk memory set for new applications ER p. 57 Sept. 16
Memory technology—Special report
Memories: practice and promise p. 104 Oct. 28
I Staying ahead of the game p. 106 Oct. 28
II Scant room for improvement p. 109 Oct. 28
III Smaller cores, bigger challenge p. 112 Oct. 28
IV Lower costs for longer words p. 115 Oct. 28
V Plated wire: a long shot that's paying off p. 124 Nov. 11
VI Rods look like wires, act like cores p. 128 Nov. 11
VII Weaving wires for aerospace jobs p. 131 Nov. 11
VIII MOS arrays come on strong p. 54 Dec. 23
Modular air computer ER p. 44 May 27
Monitoring panels by the numbers NP p. 172 Feb. 5
Music: Signal gains for electronic music p. 93 Apr. 29
Navigation converter talks two languages—computer device NP p. 151 Feb. 5
Need an LSI array with 96 gates? Orders filled in six weeks p. 121 July 22
Netherlands: Computer-controlled "Airlord" EA p. 164 July 22
Netherlands: Philips gets computer order EA p. 261 June 10
Netherlands: Philips unveils computer EA p. 222 July 8
"No" on software ER p. 58 Oct. 28
Not quite LSI—computer takes it from design to module ER p. 53 Aug. 5
Nova can't lose its instructions p. 76 Dec. 9
Nova, third-generation small computer to make its debut in December p. 147 Sept. 20
Numbers game—MTBF system criticized ER p. 46 Jan. 8
Office machine—computers for small design shops ER p. 60 Aug. 5
Opening a new deck—magnetic computer cards are processed by fluidic mechanism ER p. 48 Mar. 18
Outside wiring—new approach to discretionary wiring ER p. 47 June 24
PDP-8/I: bigger on the inside yet smaller on the outside p. 92 Sept. 16
Pacing ultrahigh-speed computers p. 165 Mar. 4

Package deals—shopping for software ER p. 38 May 13
Patents—Upsetting decision ER p. 52 Dec. 9
Picture that—graphical data processor ER p. 37 May 13
Punched cards on the ropes? NP p. 193 Apr. 15
Readout tubes face a challenger NP p. 160 Oct. 28
Real-time reservation ER p. 51 Aug. 5
Ring up a computer ER p. 52 July 8
Sales leadership—new optimism at two companies ER p. 38 May 13
Sidestepping the System 360 goals—IBM model 25 computer NP p. 156 Jan. 22
Simulators go to the head of the class p. 163 Apr. 15
Single logic configuration compares 8-bit numbers p. 101 Sept. 16
Sorting out the tires p. 125 Mar. 18
South Africa: Hands off—steel mill controlled by computer ER p. 197 May 13
Soviet computer program has as many downs as ups p. 165 Mar. 18
Soviet Union: Computer finds gold in Siberia EA p. 224 July 8
Soviet Union: Contract with the Italians for computer peripheral equipment EI p. 272 Oct. 14
Soviet Union: Export wares EA p. 214 Feb. 5
Spotting faults—visual inspection of IC's by computer ER p. 48 Mar. 4
Subway: Hamburg, Germany, testing control systems for automated subway p. 124 Aug. 19
Sweden: Computer plots instant patient data EA p. 183 Aug. 19
Switch contacts minimize contamination NP p. 147 Aug. 19
Testing on the wing p. 81 Apr. 29
Threshold logic will cut costs, especially with boost from LSI p. 94 May 27
Too-fast converter finds its niche NP p. 242 Aug. 5
Treading softly—computer weeds out defective tires and grades acceptable ones ER p. 50 Feb. 19
Triple play speeds a-d conversion p. 69 Apr. 29
Turned off on real time—no computer for IC processing ER p. 64 Apr. 15
Utilities go slow on automation p. 125 Sept. 30
Voting: Enhancing the voice of the people ED p. 31 Nov. 25
Voting—A night to forget ER p. 50 Nov. 25
Walk-in model—CDC 7600 ER p. 45 Dec. 9
Wang offers grown-up calculator NP p. 215 Apr. 15
West Germany: Fixing the brake-electronic antiskid system EI p. 271 Oct. 14
West Germany: Meeting a knead—computerized baking EI p. 270 Oct. 14
West Germany: Siemens AG moving up on IBM EA p. 223 July 8
Where are you?—Chicago bus identification system ER p. 60 Mar. 18
Widetrack trend is accelerated NP p. 152 Dec. 9

CONSUMER ELECTRONICS

All-purpose scapegoat ED p. 23 Jan. 8
Bartenders, electronic, for the home ER p. 66 June 10
Coating extends life span of tape duplicating heads NP p. 189 Feb. 5
Color tv camera focuses on low cost NP p. 195 July 8
CATV—Untangling cable tv ER p. 52 June 10
F-m stereo tuner—Interesting, but expensive ER p. 44 Sept. 30
A funny thing happened on the way to prosperity p. 114 Jan. 8
Great Britain: Sound thought—preamplifier for hi-fi EI p. 309 Nov. 11
Hi-fi—Schottky problems for hi-fi makers ER p. 58 June 24
Home color video tape recording ER p. 47 Feb. 19
Industry nips at consumers' watchdog p. 170 Aug. 5
IC audio amplifier puts out 5 watts NP p. 111 Nov. 25
IC's in tv's ER p. 56 July 8
Japan: Electronic watch EA p. 209 Feb. 5
Japan: Good tip—low-distortion phonograph pickup EA p. 170 Sept. 2
Japanese cook up cool oven with fins NP p. 240 Apr. 15
Kitchen danger—potential hazards from microwave ovens ER p. 43 Sept. 30
Lots of radio on just one IC p. 124 Aug. 5
Mexico: Manana is today in Mexico p. 185 Nov. 11
Moog music ER p. 41 Mar. 4
Music: putting electronic organs in tune with natural sound p. 100 June 24
Music: Signal gains for electronic music p. 93 Apr. 29
Microwave mini-oven ER p. 39 Apr. 29
. . . others go solid—component producers pushing for tubeless tv ER p. 56 July 8
Packing 33 channels on ¼-inch tape NP p. 113 Apr. 1
Pin money computerized scoring for bowling ER p. 46 Jan. 22
Portable color cameras in the picture NP p. 133 May 13
Radiating worry ER p. 56 Apr. 15
Radiation standards ER p. 52 Oct. 28
Real-time reservation—computerized reservation system ER p. 51 Aug. 5
Recipes for IC's—food blenders ER p. 54 Aug. 19
7-inch record plays for two hours on each side ER p. 65 Apr. 15
Slide view—color tv system that can screen color slides ER p. 42 May 13
Some push tubes . . . —RCA offering nine-pin miniature tubes; GE pushes its Compactron tubes ER p. 54 July 8
Speakers—plastic replaces paper in new speaker shape that lowers cost NP p. 190 Feb. 5
Taiwan: Consumer electronics plant EI p. 272 Oct. 14
Tv tuner tuned to ease of repair NP p. 247 Mar. 4
Test-set kit for plant or shop NP p. 188 Jan. 6
There's no overcharge for fast-charged batteries—diodes protected by thermal switches prevent nickel-cadium cells from rupturing during fast recharge p. 97 Jan. 22
Transceiver puts an FET up front NP p. 252 Mar. 4
Tuner for all channels ER p. 46 Feb. 19
Tuning bar replaces radio dial NP p. 185 Jan. 8
Uni-Key—ceramic disk memory set for new applications ER p. 57 Sept. 16
Varactor diodes search f-m band NP p. 248 Mar. 4
Vtr travels for on-the-spot recording NP p. 131 Apr. 1
Video tape recorders: Longitudinal or helical scan? p. 80 Apr. 1
Waiting for a home vtr? Don't hold your breath p. 102 Sept. 30
West Germany: Bright tune—tuning-indicator circuit for stereo receiver EA p. 246 Jan. 8

COUNTERMEASURES

Air Force gets new, economy BUIC p. 159 Sept. 16
Awacs—on the flight line, but . . . ER p. 54 June 24
Awacs—Waiting for Awacs ER p. 46 July 22
AWACS wins approval—Crisis of identity ER p. 54 Sept. 30
A question of priority ER p. 52 Mar. 18
Sentinel orders ER p. 68 Oct. 14

CRYSTALS

Climate for growth is inside cathode NP p. 278 Nov. 11
Crystal gives precision to a stable multivibrator p. 121 Nov. 11
Crystal growing ER p. 74 Nov. 11
Field detector works in real time p. 118 June 24
Filter on a slice—monolithic crystal filter ER p. 45 Sept. 30
Frequency stabilized with oven in an oven NP p. 169 May 13
In phase—new way to test crystals ER p. 48 Apr. 15
Japan: Crystal clear—X-ray crystallography EA p. 169 Sept. 2
Japan: Desaturated—Schottky diode in transistor-transistor logic circuit keeps inverter transistor from saturating EA p. 209 Feb. 5
Japan: Quick curtain—polycrystalline isolation technique EI p. 209 Sept. 30
Storing light and current in crystals p. 104 July 8
System grows 50,000-chip crystals NP p. 215 June 10

CYBERNETICS

Automating all along the line p. 88 Nov. 25

DETECTION

Air Force gets new, economy BUIC p. 159 Sept. 16
Alarming vibrations—getting the "feel" of the enemy ER p. 42 Dec. 23
AWACS wins approval—Crisis of identity ER p. 54 Sept. 30
Detecting data errors boosts transmission accuracy p. 91 Jan. 8
Dynamic tests for op amps use synchronous modulation p. 118 Aug. 5
Field detector works in real time p. 118 June 24
Follow the bouncing ball—non-mechanical inertial reference instrument ER p. 58 Oct. 14
Great Britain: Insect early warning EA p. 186 Aug. 19
Great Britain: Instrument spots defects in metal tubing EA p. 148 Apr. 29
Great Britain: Laser as an eavesdropping device EA p. 164 July 22
Guarding industry's electrical loads p. 86 Jan. 8
Height of sophistication in in-flight monitoring p. 78 May 13
Infrared camera takes a big picture NP p. 221 Aug. 5
Infrared detector ready f - civilian life NP p. 172 Sept. 30
Japan: Traffic control by noise sensor EA p. 150 Apr. 1
Night sight ER p. 56 Aug. 19
Night watch—preventing crib death ER p. 40 Apr. 29
Pattern-recognition logic analyzes infrared signals p. 112 Nov. 11
Photocell senses ultraviolet NP p. 136 Sept. 2
Photocell sensitive to ultraviolet NP p. 163 June 24
Portable unit sees millionth-of-a-gauss NP p. 207 Oct. 14
Probe lights up to verify IC logic state NP p. 275 Nov. 11
Recombination radiation—New way to look at it ER p. 51 Nov. 25
Scanner puts it on the line NP p. 121 Dec. 23
Security guard system uses magnetically encoded ID cards ER p. 63 Apr. 15
Sensing the fire before it erupts NP p. 165 Jan. 22
Starry-eyed mosaic—solid state photomosaic device ER p. 54 May 27
Storing light and current in crystals p. 104 July 8
West Germany: Underarm protection—personal alarm system EI p. 135 Dec. 23
X-rays can find wafer imperfections p. 165 May 27

DIODES

Batch view—Light-emitting diode arrays ER p. 52 Feb. 19
Bright idea—monolithic array of gallium-arsenide light-emitting diodes ER p. 53 Oct. 14
British Gunn shoots at X band NP p. 173 Feb. 19
Calculating Gunn-diode output p. 148 Nov. 11
Cubic zener has low drift NP p. 200 May 27
Diode from Japan crowds the Halls NP p. 246 Apr. 15
Diodes in multivibrator lessen frequency variations p. 92 July 8
Diodes prevent overload by limiting input's slope p. 69 Jan. 22
Diodes—they also serve p. 90 Feb. 19
Diodes put out more milliwatts NP p. 117 Dec. 23
Fabrication advances boost potential of avalanche diodes p. 96 July 8
Great Britain: Behind the Gunn EA p. 245 May 27
Great Britain: Gunned-up pulses EA p. 171 Sept. 2
Gunn diodes—first of a series ER p. 39 Sept. 2
Impatt impact—microwave radar "trap" ER p. 37 Apr. 29
IEEE product preview: Shifting into the future p. 188 Mar. 4
Isolation problems get an airing—planar air technique p. 75 Apr. 29
Japan: . . . and diodes today for millimeter-wave phone setup EI p. 210 Sept. 30
Japan: Desaturated—Schottky diode in transistor-transistor logic circuit keeps inverter transistor from saturating EA p. 209 Feb. 5
Japan: One to make ready—diode oscillator EI p. 269 Oct. 14
Laser encodes diode memory ER p. 37 Dec. 23
Lighting up in a group p. 104 Mar. 4
A little millimeter radar ER p. 40 Mar. 4
Meeting specifications—after radiation NP p. 197 May 27
MOS used as capacitor in diode package NP p. 265 Mar. 4
Ohmmeter and diode measure dwell angle p. 105 Aug. 5
Photoresistor coupler switches in 1 ms NP p. 212 Aug. 5
P-i-n diodes turn on microwave bands faster p. 67 Apr. 29
Schottky-barrier mixer diode—GaAs on sapphire ER p. 51 July 8
Schottky diodes—gold diffusion alternative ER p. 58 Oct. 28
Schottky problems for hi-fi makers ER p. 58 June 24
Silicon diodes go to 150 kilovolts NP p. 136 Jan. 22
Solid state module makes for light reading p. 74 Sept. 2
Stripped for action—magnetic amplifier uses a zener diode in place of the demodulator ER p. 32 Apr. 1
There's no overcharge for fast-charged batteries—diodes protected by thermal switches prevent nickel-cadmium cells from rupturing during fast recharge p. 97 Jan. 22
Through channels—Uhf tuner EA p. 210 Feb. 5
Transistor and zener monitor calibration p. 102 June 24
Transistor and zener protect series regulator p. 92 July 8
Transistor increases zener's power capability p. 99 Sept. 16
Tuning Gunn diodes ER p. 44 Sept. 30
Tuning a laser over 50 gigahertz ER p. 41 Sept. 2
Tunnel diode speeds pulse frequency modulation p. 73 Jan. 22
Two impatts: less noise or less money NP p. 169 Oct. 28
Zener can take 1,000 watts NP p. 220 Mar. 4
Zener power supply answers current problem p. 71 Jan. 22
Zener simulates muscle signals p. 111 June 10
Zener triggers a-c alarm circuit p. 122 Nov. 11
Zeners and SCR fire gas discharge tube p. 71 July 22

DISPLAYS

Batch view—light-emitting diode arrays ER p. 52 Feb. 19
Braided characters—low-cost cathode-ray tube display units ER p. 56 Mar. 4
Bright idea—monolithic array of gallium-arsenide light-emitting diodes ER p. 53 Oct. 14
Controlling the view—EL display ER p. 56 Nov. 11
Cool view — thermochromics, materials which change color when their temperatures change ER p. 38 Apr. 1
Curve tracer shows scale and beta NP p. 149 Oct. 28
Deflected by digits ER p. 54 Sept. 30
Drawn to light—display uses stripe domains ER p. 52 Feb. 5
Electroluminescent displays—New light on the subject ER p. 47 Jan. 8
Four-color cathode-ray-tube display system with single electron gun ER p. 40 Apr. 1
France: Place on panels sought for meters NP p. 120 Apr. 29
Fruit of the loom—lower-cost braided-wire memory ER p. 52 Jan. 8
Graphics terminal displays attractive figure: under $10,000 NP p. 141 Dec. 9
Happy medium—advanced remote display station ER p. 50 Feb. 19
IEEE product preview: Digits for everyone p. 202 Mar. 4
Japan: Elfin tubes—In the groove EA p. 243 May 27
Keeping track of the action—multicolored dynamic projections speed commands or management decisions p. 92 Aug. 5
Light reading—photoconductive arrays on single substrates ER p. 50 Aug. 19
Lighting own way—light-emitting diode array ER p. 48 Apr. 15
Lighting up in a group p. 104 Mar. 4
A new 'scope—and a wider scope NP p 239 Nov. 11
New terminals in display picture p. 159 Jan. 8
Now you see it—electro-luminescent photoconductor image converter ER p. 51 Oct. 28
On display—A. B. Dick Co. Videograph Series ER p. 60 July 8
Plasma display panel with inherent memory ER p. 39 July 22
Real-time reservation—computer-generated cathode-ray-tube displays ER p. 52 Aug. 5
See-through view—color panel ER p. 50 Nov. 25
Solid-state display nears market p. 95 July 22
Solid state module makes for light reading p. 74 Sept. 2
Thermocouple data digitized NP p. 186 Sept. 16
Through a glass brightly p. 95 Feb. 5
TTL enters a numbers game NP p. 223 Nov. 11
Utilities go slow on automation p. 125 Sept. 30
Wave analyzer has 85-db dynamic range NP p. 137 July 22

EDITORIALS

After Vietnam p. 23 Apr. 15
All-purpose scapegoat p. 23 Jan. 8
An emerging solution p. 23 May 27
Automation: good barometer for markets p. 31 Dec. 23
The best salesman p. 31 Sept. 30
A case of self-deception p. 31 Sept. 2
A challenge for the power industry p. 31 Nov. 11
Charting innovation—Bardeen, Shockley and Brattain, the transistor trio p. 23 Feb. 19
"Competition is good . . . sometimes" p. 31 Dec. 23
Copying may not work p. 23 Mar. 18
Down with the upkeep p. 31 Aug. 19
The earth: a neglected spacecraft p. 23 Apr. 1
Enhancing the voice of the people p. 31 Nov. 25
For NASA: days of decision p. 31 Oct. 14
From another Iron Mountain p. 23 Jan. 22
Getting your money's worth p. 31 July 8
Good business: an international approach p. 31 July 22
Graphics may return control to the engineer p. 31 Aug. 5
Hard line on software p. 23 May 27
Heading toward a record p. 23 Jan. 8
International outlook p. 31 Sept. 30
Japan chooses its IC road p. 23 May 13
A little knowledge p. 23 Apr. 15
McNamara's parting shot is almost on target p. 23 Apr. 29

One-way street to a dead end p. 23 Mar. 4
The other jobs were easy p. 23 Feb. 5
Overhead needs a realistic ceiling p. 31 Oct. 28
Pinning the blame p. 23 June 10
Survival kit p. 31 Sept. 16
Show and tell p. 23 Mar. 4
Systems engineering for airlines p. 31 Aug. 5
A 'testy' attitude p. 23 June 10
Unjamming the spectrum p. 23 Mar. 13
Vintage year in Europe? p. 31 Dec. 9

EDUCATION

Business and the urban crisis—McGraw-Hill special report p. C1-C16 Feb. 5
CAI edges slowly into the classroom p. 163 Aug. 5
Czechoslovakia: Head of the class—teaching machine EA p. 205 June 24
Electronics Markets 1968: Computer-assisted instruction stepping up in class p. 116 Jan. 8
Great Britain: Computer quiz EA p. 222 July 8
Great Britain: IC to change college curricula EA p. 207 June 24
Keyboard education ER p. 60 Mar. 18
The other jobs were easy ED p. 23 Feb. 5
Programed learning system, the AVS-10 video ER p. 50 June 24
Programing executives for overseas p. 183 Oct. 14
RCA instruction system hooked into a computer ER p. 42 Apr. 1
School work—experimental computer-assisted instruction system has conventional tv sets and pushbutton telephones ER p. 56 Feb. 5
Simulators go to the head of the class p. 163 Apr. 15
Workshops to acquaint college and university teachers with recent advances in d-c measurement ER p. 66 July 8

ELECTRON BEAMS

Micron-size transistors ER p. 56 Oct. 28
Probing study: electron microprobe ER p. 54 Oct. 28
Space transmission method uses electric-optic crystal ER p. 47 Aug. 19

MAGNETICS

A tv film special—electron-beam recorder ER p. 51 Mar. 4

FIELD EFFECT TRANSISTORS

An old-timer comes of age p. 120 Feb. 19
Analog gate's output is cleaned up by FET p. 81 Nov. 25
Everyman's test set for semiconductors NP p. 200 Jan. 8
FET and IC keeps oscillator linear p. 84 Aug. 19
FET converter is self-oscillating p. 62 Dec. 23
FET keeps long staircase steps flat p. 94 Mar. 18
FET oscillator helps dolphins understand people p. 85 Feb. 5
FET reaches for the high ground NP p. 131 Apr. 29
FET's resistance change trips heater control p. 65 Apr. 29
FET tester keeps out the 'zot' NP p. 149 May 13
FET voltmeter reads transients p. 109 June 10
Flexible thin-film transistors stretch performance, shrink cost p. 100 Aug. 19
Gate-to-source resistor stabilizes FET regulator p. 104 Apr. 15
Ion-implant serendipity ER p. 55 Nov. 11
Japan: Forbidding FET EI p. 200 Dec. 9
MOS FET devices invade tube preserve NP p. 151 Sept. 30
Nordic trigger pulled by light NP p. 170 Dec. 9
SiN_4 for MOS FET's ER p. 46 May 27
Switzerland: Microwave FET's? EI p. 199 Dec. 9
Transceiver puts FET up front NP p. 252 Mar. 4

FILTERS

Active filter cuts frequency, and cost NP p. 188 Mar. 18
Active filters ER p. 45 Feb. 19
Active filters
Part 1: The road to high Q's p. 109 May 27
Activating the passive RC network p. 114 May 27
Part 2: Using the gyrator p. 114 June 10
Part 3: Negative-impedance converters p. 82 Sept. 2
Part 4: Approaching the ideal NIC p. 105 Sept. 16
Part 5: Applying the operational amplifier p. 98 Dec. 9
Bandpass filter covers 7 octaves NP p. 168 Sept. 30
Bandpass filters go off-shelf in vhf NP p. 174 May 13
Cutting noise in data sampling p. 70 May 13
A design-a-day channel filter NP p. 191 Jan. 8
Filter on a slice—monolithic crystal filter ER p. 45 Sept. 30
Parallel-T bandpass filter produces voltage gain p. 103 Sept. 16
Power-line filters need specific specs p. 112 June 24
Reluctant inductance—IC gyrators ER p. 54 Dec. 9
Simple method eliminates excess inductors in filters p. 58 Dec. 23
Space transmission method uses electric-optic crystal ER p. 47 Aug. 19
Third-order active filter uses three transistors p. 122 Oct. 14

GENERATORS

Fabrication advances boost potential of avalanche diodes p. 96 July 8
Pulse generator is supply and temperature independent p. 106 May 27
Pulse generator takes to the field NP p. 123 Nov. 25
R-f generator has digital readout NP p. 110 Dec. 23
Signal generators use phase lock to sweep NP p. 195 Mar. 18

GRAPHIC TECHNIQUE

No need to juggle equations to find reflection—just draw three lines p. 93 Oct. 29

GUIDED MISSILES

Guidance for $2,000—computer to guide an air-to-surface missile ER p. 52 Nov. 25
No metric Maverick ER p. 46 July 22
Uniform electronic modules for fire-control system at Poseidon missile p. 171 Apr. 15

GUNN EFFECT

Budding germanium ER p. 40 May 13
Calculating Gunn-diode output p. 148 Nov. 11
Cooling it—higher microwave power is possible with better heat sinking ER p. 52 Feb. 5
Diodes put out more milliwatts NP p. 117 Dec. 23
Double cavity widens Gunn range NP p. 269 Nov. 11
France: Keeping up—Gunn oscillator EA p. 246 May 27
Great Britain: Behind the Gunn EA p. 245 May 27
Great Britain: Gunned-up pulses EA p. 171 Sept. 2
Gunn diodes—first of a series ER p. 39 Sept. 2
Gunn-effect oscillators aim at klystron markets NP p. 157 June 24
Gunn in the West ER p. 54 Mar. 18
In step—solid state phased-array radars ER p. 47 Feb. 5
Japan: 50-mw Gunn oscillators NP p. 203 May 27
Tuning Gunn diodes ER p. 44 Sept. 30

HALL EFFECT

Diode from Japan crowds the Halls NP p. 246 Apr. 15
Great Britain: Up the Hall—transducer EA p. 212 Feb. 5
IC operation keyed to Hall effect NP p. 169 Sept. 16

INDUSTRIAL ELECTRONICS

Accentuating the negative—processing machine uses microwaves to dry movie film ER p. 48 Mar. 4
All-purpose scapegoat ED p. 23 Jan. 8
Australia: Electronics sales EA p. 172 Sept. 2
Banks—Hempstead Bank will install computerized purchasing system ER p. 56 Feb. 5
Bell Canada's R&D arm, Northern Electric, develops reach p. 125 May 13
Blind controller eyes special situations NP p. 231 Apr. 15
A challenge from the power industry ED p. 31 Nov. 11
Copying may not work ED p. 23 Mar. 18
Crime-fighting—Wescon '68 p. 137 Aug. 5
Data converter accepts 20 channels NP p. 119 Dec. 23
Election issues for electronics p. 139 Oct. 28
Electronic desk for executives ER p. 56 Feb. 19
Electronic traffic control: can it make the grade? p. 157 Apr. 15
Electronics Markets 1968: State of the mart; gains slowed by war priorities p. 105 Jan. 8
New member of the billion-dollar club p. 132 Jan. 8
European electronics markets: 1969—report p. 65 Dec. 23
It's got to be good p. 71 Dec. 23
West Germany p. 72 Dec. 23
United Kingdom p. 76 Dec. 23
France p. 79 Dec. 23
Italy p. 81 Dec. 23
Sweden p. 83 Dec. 23
The Netherlands p. 85 Dec. 23
Belgium p. 86 Dec. 23
Switzerland p. 87 Dec. 23
Spain p. 88 Dec. 23
Denmark p. 89 Dec. 23
Norway p. 90 Dec. 23
Fairchild shakeup See **Business**
Fare price—IBM system will automatically deduct fares from a magnetically coded card ER p. 58 July 8
FAA priorities irk critics p. 155 Feb. 19
Federal budget—An uncertain guide for suppliers p 137 Feb. 19
Fluidics stays barely above water p. 199 Nov. 11
France: Gathering clouds EI p. 199 Dec. 9
France: Travelers' check—magnetic-card system EA p. 163 July 22
GE raising prices of some of its devices ER p. 64 Sept. 16
Going directly to the director—N/C device NP p. 168 Jan. 22
Good business: an international approach ED p. 31 July 22
Great Britain: Tripling the guard—ferrite device for shutdown system EA p. 318 Mar. 4
Green light, red faces—explanation of failure of card security system at Democratic National Convention ER p. 57 Sept. 16
Guarding industry's electrical loads p. 86 Jan. 8
Heading toward a record ED p. 23 Jan. 8
Hybrid computers III Devising industrial control systems p. 132 Oct. 14
India bids for self-sufficiency p. 117 Sept. 2
Indonesia: East is east—and cheaper EI p. 309 Nov. 11
Industrial control computers solve some problems, but cause others p. 129 May 27
IEEE product preview Chopping out line noise p. 199 Mar. 4
Digital meter has its limits p. 206 Mar. 4
ISA preview: the heat is on NP p. 172 Sept. 16
IBM: Federal Center broadens horizons p. 145 June 24
Inverter packs regulated wallop NP p. 208 Feb. 19
Japan: Ending to its four-year-long hassle with TI EA p. 200 May 13
Japan: Fast check—nationwide check-clearing facility EA p. 162 July 22
Japan: New way to skin a cat—bulldozer remote control for untrained operators EA p. 277 Apr. 15
Japan: Tooling around—computerized numerical control system EI p. 270 Oct. 14
Japanese IC technology—a closeup p. 98 May 13
Keeping data on the straight and narrow NP p. 201 Feb. 19
Keeping in touch—program called Pulse ER p. 60 Nov. 11
Keeping track of the action—multicolored dynamic projections speed commands or management decisions p. 92 Aug. 5
Mexico: Manana is today in Mexico p. 185 Nov. 11
Moving into ghettos ER p. 45 May 27
Music: putting electronic organs in tune with natural sound p. 100 June 24
Music: Signal gains for electronic music p. 93 Apr. 29
NASA's technology utilization program—Hard selling technology p. 111 Jan. 22
Netherlands: Nationwide network to check air pollution EA p. 320 Mar. 4
Netherlands: A self-service gasoline station EA p. 262 June 10
Numerical control—It's in the cards to start new line NP p. 212 Mar. 18
Office machines—computers for small design shops ER p. 60 Aug. 5
The other jobs were easy ED p. 23 Feb. 5
Oven—Frequency stabilized with oven in an oven NP p. 169 May 13
Pattern-recognition logic analyzes infrared signals p. 112 Nov. 11
Power-line filters need specific specs p. 112 June 24
Printer types 60 characters a second NP p. 169 June 24
Printing—Dvm-printer costs less than $1,000 NP p. 154 May 13
Printing—first electronic printing calculator ER p. 56 Feb. 19
Printing—Photographic printer controlled by UJT-SCR timer p. 96 Mar. 18
Process trainer gives operators true picture NP p. 131 Jan. 22
Rate counter talks user's language NP p. 209 Mar. 18
Reacting fast to reactions NP p. 204 Feb. 19
Reed switches form a nonmechanical lock p. 92 Oct. 28
Reporting "breakthroughs" ER p. 40 Dec. 23
Russia—an open market p. 126 Dec. 9
Saving money on data transmission as signals take turns on party line p. 119 Apr. 15
Security guard system uses magnetically encoded ID cards ER p. 63 Apr. 15
See the sea—88-passenger hydrofoil Dolphin ER p. 40 Jan. 22
Semiconductor firms' captive lines capture defense contractors' fancy p. 129 July 8
Sensing the fire before it erupts NP p. 165 Jan. 22
Servo potentiometer charts many courses NP p. 235 Apr. 15
Servocontrol dons civvies NP p. 246 Aug. 5
Sorting out the tires p. 125 Mar. 18
South Africa—Hands off—steel mill controlled by computer ER p. 197 May 13
Soviet Union: 1969 outlook for electronics EI p. 136 Dec. 23
Subway: Hamburg, Germany, testing control systems for automated subway p. 124 Aug. 19
Switzerland: Quartz-controlled, IC wristwatch was a hands-down winner at International Chronometric Competition EA p. 321 Mar. 4
Sylvania would rather switch—tactical telephone exchange p. 119 Aug. 19
Taiwan: a changing image p. 165 June 10
Tantalum hike ER p. 56 Jan. 8
TTL makers switch their sales pitch NP p. 147 July 8
Treading softly—computer weeds out defective tires and grades acceptable ones ER p. 50 Feb. 19
Triple play speeds a-d conversion p. 69 Apr. 29
Uni-key—ceramic disk memory set for new applications ER p. 57 Sept. 16
Unpackaged chips set for gains p. 117 May 13
Utilities go slow on automation p. 125 Sept. 30
Videocomp typesetter from RCA ER p. 54 Mar. 4
Vin automatique ER p. 74 Nov. 11
Voting: Enhancing the voice of the people ED p. 31 Nov. 25
Voting—A night to forget ER p. 50 Nov. 25
War puts agencies on short rations p. 151 Feb. 19
Watchdog at bay—Government's Renegotiation Board under industry attack again ER p. 42 Jan. 22
Weld watcher ER p. 62 June 10
West Germany: Hanover Industrial Fair EA p. 147 Apr. 29
West Germany: In a scrape—radio-controlled scoop loader for radioactive debris EA p. 211 Feb. 5
West Germany: Meeting a knead—computerized baking EI p. 270 Oct. 14
West Germany: Quick recovery EI p. 308 Nov. 11
West Germany: Top grade—grader has Nivomatic blade-control system EA p. 247 Jan. 8

INFORMATION RETRIEVAL

ARPA network will represent integration on a large scale p. 131 Sept. 30
Census Bureau depends on electronics to make its 1970 national nose count p. 103 July 22
Computer with peripherals will rent for $40 a month NP p. 193 Oct. 14
Data banks overdrawn ER p. 53 Feb. 19
Detecting data errors boosts transmission accuracy p. 91 Jan. 8
Dial a book ER p. 66 July 8
Federal libraries cast a long shadow p. 123 July 8
Keeping track of the action—multicolored dynamic projections speed commands or management decisions p. 92 Aug. 5
Laser recording ER p. 50 Mar. 18
Medical literature analysis and retrieval will be upgraded and expanded to integrate and automate all the functions of the library ER p. 60 June 24
Opening a new deck—magnetic computer cards are processed by fluidic mechanism ER p. 48 Mar. 18
Readout tubes face a challenger NP p. 160 Oct. 28

INSTRUMENTS

Accelerometer has cut-rate price NP p. 185 June 10
Airplane altimeter goes all-electric NP p. 168 July 8
Brain probe thin-film strain gage ER p. 50 June 10
Canada: Airborne magnetometer EI p. 206 Oct. 28
Complex math in modular form NP p. 138 Jan. 22
Connector withstands high temperature NP p. 189 June 10
Computing counter can measure rpm NP p. 195 June 10
Counter—It's what's inside that really counts NP p. 180 July 8
Counter extended to 100 megahertz NP p. 230 Mar. 4
Counter range extended to 18 Ghz NP p. 141 Jan. 22
Curve tracer shows scale and beta NP p. 149 Oct. 28
Defense Dept. studying the reliability of self-destruct mechanisms for electronic espionage gear ER p. 48 Apr. 29
Dial 99 for 1100011—decimal-to-binary converter NP p. 134 Jan. 22
Digital voltmeter logs in decibels NP p. 224 Mar. 4
East Germany: New stage for stars—planetarium projector EA p. 147 Apr. 1
Electronics Markets 1968: Growth rate a Vietnam casualty p. 118 Jan. 8
Energetic identification—induced electron emission spectrometer ER p. 48 Dec. 9
For low cost, count on RTL (resistor-transistor logic modules) p. 74 Jan. 22
French firm enters U.S. market for nuclear instrumentation p. 157 May 27
Frequency counter extended into uhf NP p. 141 Sept. 2

FDR: a new deal for faultfinders p. 96 Aug. 19
Frequency switch resists noise NP p. 133 Sept. 2
Geiger fuel gauge for aircraft ER p. 72 Nov. 11
Going directly to the director—N/C device NP p. 168 Jan. 22
Great Britain: Instrument spots defects in metal tubing EA p. 148 Apr. 29
Great Britain: microscope checks IC's EA p. 221 July 8
Great Britain: Torrid zones—infrared microscope pinpoints the torrid zones on transistors and IC's EA p. 248 Jan. 8
Have scope, will travel NP p. 146 Jan. 22
Hewlett-Packard still selling tube designs ER p. 64 Oct. 14
Hewlett-Packard vs. GAO, continued ER p. 50 Feb. 5
ISA preview: the heat is on NP p. 172 Sept. 16
IEEE product preview
Sensitive and far-ranging p. 192 Mar. 4
Seeing things wrong p. 198 Mar. 4
A plug-in's plug-in p. 199 Mar. 4
Computer aide designed p. 201 Mar. 4
Panel-size meter prints out data p. 204 Mar. 4
Japan: Thermoluminescent material checks radiation dose EA p. 255 Mar. 18
Japan:Traffic control by noise sensor EA p. 150 Apr. 1
Japanese-made IC probe—Saying sayonara to U.S. testers NP p. 204 Jan. 8
Latching relay stays in shape NP p. 127 July 22
Making it in pictures p. 130 Apr. 15
Measuring up to standards NP p. 191 Feb. 19
Monitoring panels by the numbers NP p. 172 Feb. 5
Night vision instruments improved with tiny microchannel plate ER p. 54 Sept. 16
Nonlinear resistor regulates voltage NP p. 105 Apr. 1
Non-mechanical inertial reference instrument—Follow the bouncing ball ER p. 58 Oct. 14
Oscillator serves many functions NP p. 119 Apr. 29
Oscilloscopes: a new 'scope—and a wider scope NP p. 239 Nov. 11
Packing 33 channels on ¼-inch tape NP p. 113 Apr. 1
Pattern-recognition logic analyzes infrared signals p. 112 Nov. 11
Phase detected automatically NP p. 176 Sept. 30
Photocell sensitive to ultraviolet NP p. 163 June 24
Pots straighten out and go linear NP p. 174 Jan. 8
A printer ouput when it counts NP p. 204 Mar. 18
Probe lights up to verify IC logic state NP p. 275 Nov. 11
Probing study—electron microprobe ER p. 54 Oct. 28
Proportional controller: steady heat for under $100 NP p. 126 Nov. 25
Putting the pressure on thin films NP p. 168 Feb. 5
Rate counter talks user's language NP p 209 Mar. 18
Reader welcomes characters who make a bad impression NP p. 153 Oct. 28
Relay won't wait for reading NP p. 142 Sept. 2
Sensing the fire before it erupts NP p. 165 Jan. 22
Signal analysis with a 20-hertz bandwidth NP p. 228 Aug. 5
Signal averagers, low-cost, from Britain NP p. 165 July 8
Sine waves become square, with a symmetrical switch p. 74 May 13
Spectrum analysis for only $1,300 NP p. 193 June 10
Thermocouple data digitized NP p. 186 Sept. 16
Through thick and thin with infrared beams p. 101 Mar. 18
Transducer, sealed pressure, can be cleaned NP p. 154 Sept. 30
Travel companion keeps a diary—sensor-recorder system NP p. 147 Jan. 22
The twain meet in new scope NP p. 177 May 27
Up the ladder—Practical precision resistor ladder networks ER p. 70 Nov. 11
Using a universal pulser for a-c checks of IC flip-flops p. 120 May 27
Vibrating angular rate sensor may threaten the gyroscope p. 130 June 10
Wave analyzer has 85-db dynamic range NP p. 137 July 22
Wave analyzers: a bright future p. 62 July 22
Wave synthesizer accurate to .01% NP p. 143 Aug. 19
Wescon preview: IC testers, op amps star p. 191 Aug. 5
Fast testing without frills p. 191 Aug. 5
Tester takes to any op amp p. 192 Aug. 5
Comparing with the best p. 193 Aug. 5
See-as-you-go IC tester p. 194 Aug. 5
Improving on the 709 p. 195 Aug. 5
A broadband phasemeter p. 196 Aug. 5
Miniflaws spotted inexpensively p. 197 Aug. 5
Data-gathering in the field p. 198 Aug. 5
IC's transfer data at 30 Mhz p. 200 Aug. 5
Fourth terminal adds new jobs p. 202 Aug. 5
Ribbon indicator goes all-electric p. 206 Aug. 5
This dielectric keeps it cool p. 207 Aug. 5
Digital meter is analog-small p. 210 Aug. 5
West Germany: Underarm protection—personal alarm system EI p. 136 Dec. 23
X-rays can find wafer imperfections p. 165 May 27
Yugoslavians sell electron miscroscope NP p. 163 Jan. 22

INTEGRATED ELECTRONICS

Active filters
Part 1: The road to high Q's p. 109 May 27
Activating the passive RC network p. 114 May 27
Part 2: Using the gyrator p. 114 June 10
Part 3: Negative-impedance converters p. 82 Sept. 2
Part 4: Approaching the ideal NIC p. 105 Sept. 16
Australia AWA will develop and produce ICs EA p. 261 June 10
Avoiding IC system design pitfalls p. 110 Aug. 5
Beam leads vs. flip chips
Part 1: In search of a lasting bond p. 72 Nov. 25
Part 2: Rival preleading schemes head for a market showdown p. 88 Dec. 9
Beating the heat T-shaped heat sink for monolithic IC's triples power-handling capabilities ER p. 44 Jan. 22
Beyond microwave IC's—new technique called praetersonics ER p. 66 Nov. 11
Big Z hits the market NP p. 173 Jan. 22
Boosting color tv's i-f performance p. 130 Mar. 4
Buyers' choice—Fairchild's series of linear IC's ER p. 47 Mar. 18
Clockmaker counts on IC's NP p. 193 Sept. 16
Color-tv demodulator goes IC NP p. 221 June 10
Computer-aided design
Part 13: Defining faults with a dictionary p. 64 Jan. 22
Part 14: Start with a practical IC model p. 94 Mar. 4
Cranking out masks-computer-controlled masking camera does step-and-repeat work ER p. 38 Jan. 22
Curve tracer tests logic IC quickly p. 98 June 24
Decoding job built into IC NP p. 210 Sept. 16
Delay line is IC size NP p. 191 June 10
Design-it-yourself trend invades LSI technology NP p. 105 Apr. 1
Differential amplifier uses two IC's p. 120 Nov. 11
Doubling-up IC amplifiers make sense NP p. 217 Jan. 8
Dual 100-bit register stores indefinitely NP p. 246 Aug. 5
Dual-Quad IC gives flip-flop a fast recovery p. 86 Feb. 5
Dynamic IC testing made easy p. 74 Sept. 30
Electronics Markets 1968: Selective gains for the resourceful p. 135 Jan. 8
Fast service on custom IC's NP p. 187 June 24
Ferrites' attraction is magnetic and growing p. 104 Oct. 14
FET and IC keep oscillator linear p. 84 Aug. 19
Finding a FRIEND—IC tester ER p. 58 June 10
Finding leaky IC's on p-c boards p. 127 June 24
For low cost, count on RTL p. 74 Jan. 22
Full compensation added to op amps NP p. 184 May 27
Germanium—Warming up to germanium—solid state devices ER p. 47 Feb. 5
Getting beneath the surface of multilayer ICs p. 84 July 22
Giving IC op amps a powerful boost NP p. 154 Feb. 5
Goldilox technique to seal IC's hermetically ER p. 42 Apr. 1
Great Britain: Blinking at IC's—scanning microscope EA p. 221 July 8
Great Britain: Masked marvels—custom-design efforts EA p. 207 June 24
Great Britain: Order for transistor-transistor-logic circuits EA p. 257 Mar. 18
Grounded-base amplifier mates npn to pnp p. 89 Feb. 5
High-current switch is driven by an IC p. 120 Nov. 11
High-rise hybrids cut package size NP p. 223 Mar. 18
High-voltage IC's ER p. 53 Nov. 11
Hughes complete family of bipolar monolithic IC's ER p. 64 Aug. 5
IEEE product preview
Make, buy and now sell IC's p. 187 Mar. 4
Reliability registers high p. 189 Mar. 4
Tabs ease bonding p. 190 Mar. 4
Regulation at the site p. 192 Mar. 4
IC audio amplifier puts out 5 watts NP p. 111 Nov. 25
IC gate controls triac with audio transformer p. 106 Aug. 5
IC op amp compressed into flatpack NP p. 115 Nov. 25
IC operation keyed to Hall effect NP p. 169 Sept. 16
IC package permits unit or batch handling NP p. 207 Sept. 16
IC processing healthy, still growing p. 82 Oct. 28
IC registration revisited p. 159 Mar. 18
IC regulates negative voltages NP p. 153 Sept. 2
IC testers: stepping up in class NP p. 192 May 27
IC testing tries to keep up with gains in IC technology p. 88 May 13
IC triggers high-power devices NP p. 188 July 8
IC voltage regualtor delivers 0.5 amp NP p. 165 Dec. 9
IC's divide price of multiplier by two NP p. 214 Mar. 4
Integrated circuits in action
Part 9 Digital techniques shrink recorder p. 93 Jan. 8
Part 10 Linearizing sensor signals digitally p. 112 Mar. 4
IC's in tv's ER p. 56 July 8
IC's poaching on op amp preserves NP p. 109 Apr. 29
Integrating agc ER p. 46 Feb. 5
IBM going monolithic? ER p. 50 Oct. 28
Isolated success-dielectric isolation technique for developing linear IC operational amplifier ER p. 44 Jan. 22
Isolation problems get an airing—planar air technique p. 75 Apr. 29
Japan: A-c up to 100 watts is controlled by IC NP p. 208 Sept. 16
Japan: Big gainer—IC i-f amplifiers EA p. 146 Apr. 29
Japan: Desaturated Schottky diode in transistor-transistor logic circuit keeps inverter transistor from saturating EA p. 209 Feb. 5
Japan: Empty shelf—DECL's on prototype production line EI p. 134 Dec. 23
Japan: Exposure by IC EA p. 221 July 8
Japan: Quick curtain—polycrystalline isolation technique EI p. 209 Sept. 30
Japan chooses its IC road ED p. 23 May 13
Japanese IC technology—a closeup p. 98 May 13
LSI, Fairchild style ER p. 45 Feb. 5
LSI still chases its press clippings p. 157 June 10
Large-scale problems in LSI testing p. 99 Nov. 25
Late starter plans big family—COS/MOS NP p. 176 Jan. 22
Linear IC tester checks 22 values NP p. 223 Apr. 15
Linear IC's: Part 6 Compensating for drift p. 90 Feb. 5
A logical approach to linear IC's NP p. 243 Apr. 15
Low-cost Schmitt trigger made with digital IC p. 88 Mar. 4
Low-distortion limiter uses IC operational amplifier p. 120 Oct. 14
Measuring becomes five-digit exercise NP p. 191 June 24
Microwave IC's: Part 1 New problems, but newer solutions p. 100 June 10
Mini-Dip aims mighty high NP p. 125 Apr. 1
Mixer-modulator IC ER p. 44 May 13
More gates per circuit ER p. 42 Sept. 2
MOS bandwagon starts rolling NP p. 173 Mar. 18
MOS IC's process color video signals NP p. 133 July 22
MOS memory to sell for 10 cents a bit NP p. 189 Sept. 30
MOS shift register covers wide range NP p. 157 Oct. 28
National Semiconductor's new pair of IC's ER p. 34 Apr. 1
Need an LSI array with 96 gates? Orders filled in six weeks p. 121 July 22
Netherlands: Right-light chip—monolithic IC for electronic cameras EA p. 172 Sept. 2
Not quite LSI—computer takes it from design to module ER p. 53 Aug. 5
One capacitor makes IC a pulse-width modulator p. 71 Sept. 2
Op amp combines squelch and agc NP p. 209 June 10
Opening the MOS gate—Read-only memories ER p. 45 Feb. 19
PDP-81: bigger on the inside yet smaller on the outside p. 92 Sept. 16
Photoresist applied automatically NP p. 183 June 24
Pi-substrate MOS ER p. 50 Oct. 28
Plastic's progress — plastic-encapsulated ICs ER p. 60 July 8
Putting the stress on IC reliability p. 149 May 27
Radiation-resistant IC—lining up ER p. 52 Oct. 28
Read-only memory uses bipolar IC's NP p. 165 Aug. 19
Recipes for IC's—food blenders ER p. 54 Aug. 19
Regulator has .005% control NP p. 162 July 8
Reluctant inductance—IC gyrators ER p. 54 Dec. 9
Schmitt trigger built from a logic IC p. 84 Aug. 19
Second integrated subsystem bows NP p. 164 May 13
Second-source IC's on firm footing p. 101 Apr. 29
See-through IC—Teflon-like plastic ER p. 45 Jan. 8
Semiconductor firms' captive lines capture defense contractors' fancy p. 129 July 8
Shift registers launch MOS standard line NP p. 235 Oct. 14
Shrinking SOS ER p. 42 May 13
Single IC drives, flashes, and pulses NP p. 134 July 22
Small d-c supply has an IC regulator NP p. 198 Sept. 16
Small-scale LSI ER p. 46 Jan. 22
Solid-state display nears market p. 95 July 22
Solid state module makes for light reading p. 74 Sept. 2
Soviet Union: Integration drive—mass production of IC's EA p. 277 Apr. 15
Splendid Isolation — dielectric approach yields premium, competitive op amp NP p. 187 Feb. 5
Spotting faults—visual inspection of IC's by computer ER p. 48 Mar. 4
Standing up to abuse—IC operates on 28 volts ER p. 55 Oct. 14
Sustrate windows—beam leads on the substrate ER p. 52 Aug. 19
Super-ECL speeds signals p. 124 Oct. 14
Switzerland: Quartz-controlled, IC wristwatch was a hands-down winner at International Chronometric Competition EA p. 321 Mar. 4
TI gearing to mass-produce large-scale integrated circuit entry ER p. 45 Feb. 19
Thin-film transistors don't have to be drifters p. 88 Mar. 18
Three-stage comparator challenges 710 NP p. 185 July 8
Tiny transformer wants tv job NP p. 216 Aug. 5
Toward MOS memories ER p. 49 Oct. 28
TTL circuit replaces four 14-lead IC's NP p. 175 Oct. 28
TTL enters a numbers game NP p. 223 Nov. 11
TTL makers switch their sales pitch NP p. 147 July 8
Turned off on real time—no computer for IC processing ER p. 64 Apr. 15
Two IC comparators improve threshold converter p. 59 Dec. 23
Uncoiling r-f amplifiers ER p. 39 Mar. 4
Unlocking the gates for UJT's p. 56 April 1
Using a universal pulser for a-c checks of IC flip-flops p. 120 May 27
Visual inspection of IC's boosts reliability at little cost p. 104 Aug. 19
Wescon preview: IC testers, op amps star p. 191 Aug. 5
West Germany: It's a snap—IC's on camera shutter EI p. 302 Oct. 28
Window trimming—laser technique to adjust IC resistors after packaging ER p. 54 Feb. 5
Zapping components for better IC's NP p. 236 Mar. 4

LARGE-SCALE INTEGRATION

Adder on a chip: LSI helps reduce cost of small machine p. 119 Mar. 18
An emerging solution ED p. 23 May 27
Core assault: hybrid LSI memory ER p. 49 June 24
Cranking out masks—computer-controlled masking camera does step-and-repeat work ER p. 38 Jan. 22
Design-it-yourself trend invades LSI technology NP p. 105 Apr. 1
Discretionary LSI: airborne digital computer ER p. 47 June 24
Double deposit means more gates NP p. 225 Mar. 18
First with the fastest—Motorola will soon offer this large-scale integrated eight-bit adder ER p. 46 Apr. 15
Germanium for LSI ER p. 52 Aug. 5
Improving the mask-maker's image p. 78 Feb. 5

Japan: LSI calculator EI p. 307 Nov. 11
LSI, Fairchild style ER p. 45 Feb. 5
LSI still chases its press clippings p. 157 June 10
Large-scale problems in LSI testing p. 99 Nov. 25
More gates per circuit ER p. 42 Sept. 2
Multiplexing the LSI way: telemetry module ER p. 45 June 10
Need an LSI array with 96 gates? Orders filled in six weeks p. 121 July 22
Not quite LSI—computer takes it from design to module ER p. 53 Aug. 5
Outside wiring: new approach to discretionary wiring ER p. 47 June 24
Second integrated subsystem bows NP p. 164 May 13
Shrinking SOS ER p. 42 May 13
TI gearing to mass-produce large-scale integrated circuit entry ER p. 45 Feb. 19
Threshold logic will cut costs, especially with boost from LSI p. 94 May 27
Unpackaged chips set for gains p. 118 May 13

LASERS

Burnt into a memory—laser encodes diode memory ER p. 137 Dec. 23
Charting a simpler approach to lasers p. 90 Aug. 19
Done with mirrors—continuous-wave parametric oscillation that's potentially tunable from the infrared to the blue-green ER p. 48 Aug. 19
Dying light—lasing with liquid ER p. 40 May 13
External mirrors permit yag unit to concentrate energy in middle of spot NP p. 223 Oct. 14
Focus on CO_2—patent on a carbon-dioxide-noble-gas laser ER p. 51 Aug. 5
France: Stress on holograms EA p. 197 May 13
Getting a glow on—dayglow plastic laser ER p. 55 Sept. 16
Great Britain: Behold the fringe—applying holography to vibration analysis EA p. 195 Jan. 22
Great Britain: laser as an eavesdropping device EA p. 164 July 22
Great Britain: Light brigade EA p. 275 Apr. 15
Japan: First long-life, high-output argon and krypton lasers EA p. 236 Sept. 16
Japan: space hardware—laser radar EA p. 235 Feb. 19
Laser range finders ER p. 74 Nov. 11
Laser recording ER p. 50 Mar. 18
Laser safety ER p. 62 Aug. 5
Laser safety issue burning bright p. 193 Nov. 11
Laser series
I Laser research takes a practical turn p. 110 Sept. 16
II Mode locking opens door to picosecond pulses p. 112 Sept. 16
III Light wave of the future: optical pcm p. 123 Sept. 16
IV Blue-green high-powered light extends underwater visibility p. 140 Oct. 14
V Liquid lasers: promising solutions p. 142 Nov. 11
Laser takes routine job on assembly line NP p. 183 Sept. 30
Laser's tubes a snap to change NP p. 144 May 13
Mexico: Underground laser EA p. 200 May 13
Sighting in on narrow light beams p. 106 Mar. 18
Soviet Union: Lasers in 10 models EA p. 257 Mar. 18
Storing light and current in crystals p. 104 July 8
Taming the CO_2 laser ER p. 54 Apr. 15
3-D in sequence: Holographic "movies" ER p. 74 Nov. 11
Tracking with pulses ER p. 39 May 13
Tuning a laser over 50 gigahertz ER p. 41 Sept. 2
Underwater eyes: laser-television system ER p. 45 June 10
Unite?—Laser Industry Assn. and Electronic Industries Assn.'s new laser subdivision ER p. 56 Jan. 8
Viewing system can "see" through rain, fog ER p. 44 Dec. 23
Window trimming—laser technique to adjust IC resistors after packaging ER p. 54 Feb. 5
Yag laser cuts narrow swath in resistors NP p. 225 Oct. 14
Zapping components for better IC's NP p. 236 Mar. 4

MAGNETICS

Beyond microwave IC's—new technique called praetersonics ER p. 66 Nov. 11
Done with magnets—magnetic fluid accelerometer ER p. 54 Mar. 18
Drawn to light—display uses stripe domains ER p. 52 Feb. 5
Drawn to magnetics—memory being developed for NASA ER p. 46 Dec. 9
Ferrites
Part 1: Ferrites' attraction is magnetic and growing p. 104 Oct. 14
Part 2: Circulators for vhf and up p. 84 Nov. 25
Flowmeter uses magnetic resonance NP p. 165 Oct. 23
Great Britain: Magnetic modulator EA p. 237 Feb. 19
Great Britain: Tripling the guard—ferrite device for shutdown system EA p. 318 Mar. 4
Green light, red faces—explanation of failure of card security system at Democratic National Conevntion ER p. 57 Sept. 16
IC operation keyed to Hall effect NP p. 169 Sept. 16
Magnet users' conference ER p. 62 Oct. 14
Matched magnets in five seconds NP p. 177 Feb. 5
Memory technology—special report
Memories: practice and promise p. 104 Oct. 23
I Staying ahead of the game p. 106 Oct. 28
II Scant room for improvement p. 109 Oct. 28
III Smaller cores, bigger challenge p. 112 Oct. 28
IV Lower costs for longer words p. 115 Oct. 28
V Plated wire: a long shot that's paying off p. 124 Nov. 11
VI Rods look like wires, act like cores p. 128 Nov. 11
VII Weaving wires for aerospace jobs p. 131 Nov. 11
VIII MOS arrays come on strong p. 54 Dec. 23
Recorder heads good for 5,000 hours NP p. 141 May 13

MAINTENANCE

Diagnostic computer programs make TTC-(X) maintenance easier p. 122 Aug. 19
Down with the upkeep ED p. 31 Aug. 19
Height of sophistication in in-flight monitoring p. 78 May 13
Module tester will help speed repairs on aircraft navigation and radio equipment ER p. 60 June 24
Navy study to determine the equipment and personnel required to service all aircraft ER p. 64 Aug. 5
One-stop service for wash 'n' dry—Single station combines ultrasonic scrubbing and clean-air drying NP p. 212 Jan. 6
Pinning the blame ED p. 23 June 10
Sweden: Automatic tester checks Viggen electronics EA p. 148 Apr. 1
Weld watcher ER p. 62 June 10

MANPOWER

Business and the urban crisis—McGraw-Hill special report p. C1-C16 Feb. 5
From help wanted to jobs wanted p. 157 Mar. 4
Graphics may return control to the engineer ED p. 31 Aug. 5
JPL up in the air over space role p. 101 Apr. 1
Moving into ghettos ER p. 45 May 27
The other jobs were easy ED p. 23 Feb. 5
Overseas labor rates—the best salesman ED p. 31 Sept. 30
Programing executives for overseas p. 183 Oct. 14
Recruiters flock to Negro colleges p. 135 July 8
Simulators go to the head of the class p. 165 Apr. 15

MARINE ELECTRONICS

Canada: Fixed positions—hydrographic survey system EA p. 222 July 8
Navy drafts standard hardware—uniform electronic modules for fire-control system at Poseidon missile p. 171 Apr. 15
See the sea—88-passenger hydrofoil Dolphin ER p. 40 Jan. 22
Sonar sub-systems testing ER p. 66 June 10
Up Camera—tv periscope ER p. 42 July 22
Water works—Coast Guard establishes feasibility of a single national data buoy system ER p. 58 Mar. 18

MEASUREMENTS

Accelerometer has cut-rate price NP p. 185 June 10
Blind controller eyes special situations NP p. 231 Apr. 15
Bridge and amplifier monitor d-c level p. 99 June 24
Corrected version p. 71 Sept. 2
Devices meter auto pollutants NP p. 244 Nov. 11
Digital panel meters narrow price gap NP p. 183 Sept. 16
Finding leaky IC's on p-c boards p. 127 June 24
Flowmeter uses magnetic resonance NP p. 165 Oct. 28
France: Lowdown—new low-level altimeter EA p. 185 Aug. 19
France: Place on panels sought for meters NP p. 120 Apr. 29
Going overboard: sea reading ER p. 50 June 24
In phase—new way to test crystals ER p. 48 Apr. 15
IEEE product preview: Quality combined with automation p. 210 Mar. 4
Japan: Accurate on the draw—watt converter for dynamometer EA p. 206 June 24
Keeping data on the straight and narrow NP p. 201 Feb. 19
Laser series II Mode locking opens door to picosecond pulses p. 112 Sept. 16
Measuring becomes five-digit exercise NP p. 191 June 24
Measuring impedance with insertion loss p. 61 Apr. 1
Measuring up to varying signals NP p. 200 Mar. 13
Nanovoltmeter's output is binary NP p. 160 Sept. 30
Ohmmeter and diode measure dwell angle p. 105 Aug. 5
Portable volt-ohmmeter: troubleshooting made easy, painless NP p. 159 Sept. 30
Protecting data from the ground up p. 58 Apr. 29
Resonance effects yield in-circuit capacitance checks p. 119 Oct. 14
Reversed-polarity triode measures insulation p. 87 Feb. 5
System keeps eye on noise NP p. 197 June 10
Taking noise out of weak signals p. 80 July 8
Tiny pot does precision jobs NP p. 203 Oct. 14
Two-step process speeds low-frequency measurements p. 131 May 27
Ultrasonic probe measures wall thickness NP p. 179 Feb. 5
Voltage comparator is made with op amps and logic gates p. 91 July 8
Wattmeter has 0.02% accuracy NP p. 228 Apr. 15
West Germany: Feeling the heat—system measures the temperature of engine pistons EI p. 146 Nov. 25
West Germany: How bright? EA p. 257 Mar. 18

MEDICAL ELECTRONICS

Brain-probe-thin-film strain gage ER p. 50 June 10
Electrocardio-analyzer (ECA)—eliminating the paper work ER p. 50 Apr. 15
Electronics Markets 1968: Growing—but still in the incubator p. 113 Jan. 8
Feedback reduces bio probe's input capacitance p. 97 Mar. 18
France: Handling words—hearing with hands EA p. 208 June 24
Heart of the matter—high-speed EKG's ER p. 50 June 10
Heart watch ER p. 46 Sept. 2
How are you? x-y plotter will tell NP p. 157 Dec. 9
Japan: Catheter-type semiconductor radiation detector for diagnosis of cancer EA p. 249 May 27
Mother of invention—computer system for recording and displaying radiologists' X-ray analysis ER p. 54 Aug. 5
NASA's technology utilization program . . . over 150 medical problems could benefit from aerospace research . . . p. 114 Jan. 22
Night watch—preventing crib death ER p. 40 Apr. 29
RCA sells medical electronics agreement back to Hoffman-La Roche ER p. 56 Sept. 30
Shock cart ER p. 53 July 8
Sweden: Computer plots instant patient data EA p. 183 Aug. 19
West Germany: Pacemaker that's practically failsafe EA p. 238 Feb. 19
Zener simulates muscle signals p. 111 June 10

METEOROLOGY

Adverse Weather Aerial Delivery System (Awads) contract ER p. 50 July 22
Air Force plans new weather monitor p. 151 June 24
Australia: Written on the wind—measuring speed and direction of ionosphere EA p. 237 Sept. 16
Italy: meteorological radar system EA p. 164 July 22
Sweden: Instant weather with real-time weather maps EA p. 184 Aug. 19
Transmission of weather maps over ordinary telephone lines with isographic plotter ER p. 38 Apr. 1

MICROELECTRONICS

Drawn to light—display uses stripe domains ER p. 52 Feb. 5
Japan: Pocket video—tv set with 2-inch screen EA p. 243 May 27
A little millimeter radar ER p. 40 Mar. 4
Logical step—Autonetics microelectronics production facility ER p. 56 Jan. 8
Memory technology report See **Computers**
Micron-size transistors ER p. 56 Oct. 28
Night vision instruments improved with tiny microchannel plate ER p. 54 Sept. 16
Putting the pressure on thin films NP p. 168 Feb. 5
Thin-film transistors don't have to be drifters p. 88 Mar. 18
Uncoiling r-f amplifiers ER p. 39 Mar. 4

MICROWAVE

Amplifier not bothered by 100°C change NP p. 235 Aug. 5
Beyond microwave IC's—new technique called praetersonics ER p. 66 Nov. 11
Budding germanium ER p. 40 May 13
Buzzing drones at C band NP p. 256 Mar. 4
Cable assembly takes a turn NP p. 237 Apr. 15
Calculating Gunn-diode output p. 148 Nov. 11
Canada: microwave system EA p. 262 June 10
Car 54—Where are you?—mobile radio power transistor NP p. 186 Feb. 5
Circulator supresses echoes in 4-Ghz band NP p. 179 Sept. 30
Cleaning up f-m broadcasts NP p. 260 Mar. 4
Coaxial tube works in C-band NP p. 230 Oct. 14
Cooling it—higher microwave power is possible with better heat sinking ER p. 52 Feb. 5
A design-a-day channel filter NP p. 191 Jan. 8
Double cavity widens Gunn range NP p. 269 Nov. 11
Electron tube that can bake a cake in under four minutes ER p. 56 Mar. 4
Electronics Markets 1968: Still tied to Pentagon purse strings p. 129 Jan. 8
Fabrication advances boost potential of avalanche diodes p. 96 July 8
Fabrication control is key to microwave performance p. 109 Feb. 19
Fast service on custom IC's NP p. 187 June 24
Ferrites
Part 1: Ferrites' attraction is magnetic and growing p. 104 Oct. 14
Part 2: Circulators for vhf and up p. 84 Nov. 25
Field detector works in real time p. 118 June 24
FDR: a new deal for faultfinders p. 96 Aug. 19
Frequency stabilized with oven in an oven NP p. 169 May 13
GaAs on sapphire—Schottky-barrier mixer diode ER p. 51 July 8
Gunn diodes—first of a series ER p. 39 Sept. 2
Gunn-effect oscillators aim at klystron markets NP p. 157 June 24
Gunn in the West ER p. 54 Mar. 18
Gunn, John B., an IBM researcher, granted a U.S. patent ER p. 56 Feb. 5
Illinois Central RR's 800-mile microwave radio communications system ER p. 56 Mar. 4
Impatt: 1968—year of the impatt NP p. 165 Feb. 5
Impatt impact—microwave radar "trap" ER p. 37 Apr. 29
In step: solid state phased-array radars ER p. 47 Feb. 5
IEEE product preview
Shifting into the future p. 188 Mar. 4
Coupling cuts the time p. 197 Mar. 4
Iran: Two extensive microwave networks are planned EA p. 249 Jan. 8
Italy: microwave link EI p. 136 Dec. 23
Japan: 50-mw Gunn oscillators NP p. 203 May 27
Japan: Steady gains—Hybrid IC amplifier for S band EI p. 147 Nov. 25
Japan: Wave of the future . . . millimeter-wave phone experiment EI p. 209 Sept. 30
Japanese cook up cool oven with fins NP p. 240 Apr. 15
Khaki kitchen—Speed programs features microwave bakery ER p. 46 Mar. 4
Kitchen danger—potential hazards from microwave ovens ER p. 43 Sept. 30
Klystron is tunable automatically NP p. 191 July 8
L-band magnetron delivers 2 megawatts NP p. 229 Oct. 14
Mexico nears finish line in the first Olympic event p. 95 Apr. 1
Microwave acoustics surfacing p. 95 Dec. 23
Microwave beams p. 90 Dec. 9
Microwave IC's: Part 1 New problems, but newer solutions p. 100 June 10
Microwave mini-oven ER p. 39 Apr. 29
On-the spot tests for relay links NP p. 196 Jan. 8
Opening up the spectrum ER p. 68 Nov. 11
Outflanking suppliers in the reed-relay field NP p. 171 Jan. 8
Pacing ultrahigh-speed computers p. 165 Mar. 4
P-i-n- diodes turn on microwave bands faster p. 67 Apr. 29
Pointless plotting can save time NP p. 187 Feb 19
Power circuits key to trim package NP p. 157 Aug. 19
Radar testing with less weight NP p. 158 Aug. 19
Radiation standards ER p. 52 Oct. 28
Semiflexible cable turns the corner NP p. 115 Apr. 29
Signal generators use phase lock to sweep NP p. 195 Mar. 18
Smaller mixer stays discrete NP p. 258 Mar. 4

Switzerland: Microwave FET's? EI p. 199 Dec. 9
Taking noise out of weak signals p. 80 July 8
Thinking thin to the end NP p. 152 Jan. 22
Testing on the wing p. 81 Apr. 29
Where am I?—Loran-C navigator for foot soldiers ER p. 48 June 10

MULTIVIBRATORS
Adding a transformer halves uhf frequencies p. 87 Mar. 4
Crystal gives precision to a stable multivibrator p. 121 Nov. 11
Darlington transistors widen multivibrator's range p. 82 Nov. 25
Diodes in a multivibrator lessen frequency variations p. 93 July 8
Fast discharge reduces multivibrator's rise time p. 82 Nov. 25
Power multivibrator gives linear motion to control rods p. 69 July 22
Unijunction transistor controls stable one-shot p. 89 Jan. 8
Voltage adjustment extends multivibrator's pulse width p. 82 Sept. 30

NAVIGATION SYSTEMS
Doppler navigation system is redesigned from a to d p. 78 July 22
FAA readies new checkout system p. 127 Feb. 5
Follow the bouncing ball—non-mechanical inertial reference instrument ER p. 58 Oct. 14
France: Way in EA p. 320 Mar. 4
Navigation converter talks two languages NP p. 151 Feb. 5
Navy: raising Cains ER p. 42 Dec. 23
Prototype doppler-inertial-loran navigation system for the Air Force contract to Litton ER p. 50 July 22
RCA's integrated very-high-frequency omni-range and instrument landing system ER p. 48 Sept. 30
Underwater guide ER p. 42 Sept. 2
Where am I?—Loran-C navigator for foot soldiers ER p. 48 June 10

NUCLEONICS
French firm enters U.S. market for nuclear instrumentation p. 157 May 27
Great Britain: Changing stations—computers will handle the computations needed to simulate reactor characteristics EA p. 271 Aug. 5
Japan Lilliputian particle accelerator EA p. 186 Aug. 19
LBJ's war on radiation ER p. 54 Feb. 19
Meeting specifications—after radiation NP p. 197 May 27
Radiation-resistant thyristors: here's a good switch p. 65 Apr. 1
Radiation testing guidelines p. 122 June 10
Recombination radiation: New way to look at it ER p. 51 Nov. 25
Skipping the hard part of radiation hardening p. 122 Mar. 4

OCEANOGRAPHY
Blue-green high-powered light extends underwater visibility p. 140 Oct. 14
Going overboard: sea reading ER p. 50 June 24
Navigation converter talks two languages NP p. 151 Feb. 5
Underwater eyes: laser-television system ER p. 45 June 10
Underwater guide ER p. 42 Sept. 2
Up camera—tv periscope ER p. 42 July 22

OPTOELECTRONICS
East Germany: New stage for stars—planetarium projector EA p. 147 Apr. 1
Great Britain: More with the MOST EA p. 253 Mar. 18
Great Britain: Through the looking glasses—optical read only memory EA p. 255 June 10
Image-intensifying tubes—Bright future ER p. 60 June 10
Laser series III Light wave of the future: optical pcm p. 123 Sept. 16
Night vision instruments improved with tiny microchannel plate ER p. 54 Sept. 16
Optics aid pulse amplifier NP p. 132 Apr. 29
Pick a color—continuous parametric optical oscillator ER p. 52 Apr. 15
Sighting in on narrow light beams p. 106 Mar. 18
Space transmission method uses electric-optic crystal ER p. 47 Aug. 19
Storing light and current in crystals p. 104 July 8
Through thick and thin with infrared beams p. 101 Mar. 18
Tracking with pulses ER p. 39 May 13
West Germany: On the spot—semiautomatic wiring equipment EI p. 147 Nov. 25

OSCILLATORS
France: Keeping up—Gunn oscillator EA p. 246 May 27
Frequency stabilized with oven in an oven NP p. 169 May 13
Japan: One to make ready—diode oscillator EI p. 269 Oct. 14
Sylvania would rather switch—tactical telephone exchange p. 119 Aug. 19
TFX—Back to the drawing board ER p. 60 Apr. 15
Taking command—Clark M. Clifford takes over command of the Defense Dept. from Robert S. McNamara ER p. 48 Feb. 5
SCS outperforms UJT in relaxation oscillator p. 100 Sept. 16
Sine-wave inverter prevents interference p. 104 May 27
Wider frequency range for relaxation oscillator p. 91 Oct. 28

PACKAGING
Cubic zener has low drift NP p. 200 May 27
Fairpak finale ER p. 58 Nov. 11
High-rise hybrids cut package size NP p. 223 Mar. 18
IC op amp compressed into flatpack NP p. 115 Nov. 25
IC package permits unit or batch handling NP p. 207 Sept. 16
Japan: Put it on the line—scribe fabrication technique EI p. 307 Nov. 11
Light reading—photoconductive arrays on single substrates ER p. 50 Aug. 19
Lots of radio on just one IC p. 124 Aug. 5
Mini-Dip aims mighty high NP p. 125 Apr. 1
Plastic IC's still 4-F ER p. 45 Apr. 15
Power sealed in TO-3 case NP p. 169 Dec. 9
See-through IC—Teflon-like plastic ER p. 45 Jan. 8
Taking complexity out of pin positions NP p. 210 Apr. 15
Unpackaged chips market picks up ER p. 47 Apr. 15
Wescon '68: plastic packaging debate continues p. 137 Aug. 5
Window trimming—laser technique to adjust resistors after packaging ER p. 54 Feb. 5

PATENTS
Computers—Upsetting decision ER p. 52 Dec. 9
Focus on CO_2—patent on a carbon-dioxide-noble-gas laser ER p. 51 Aug. 5
IBM researchers receive patent for an r-f sputtering system that deposits insulator film on IC ER p. 56 Mar. 4
Japan: Hitachi skirts planar patents EA p. 269 Aug. 5
"No" on software ER p. 58 Oct. 28
Patent bill not pending ER p. 52 May 27
Service offers details on patents pending ER p. 33 Apr. 1

PATTERN RECOGNITION SYSTEMS
Airline computerized reservation system—display generates up to 300 characters per second ER p. 51 Aug. 5
Drawn to light—display uses stripe domains ER p. 52 Feb. 5
France: The right address—address generator EA p. 271 Aug. 5
Great Britain: More with the MOST EA p. 253 Mar. 18
Handler-reader at under $1,000 NP p. 173 June 24
Illiac cutback ER p. 56 Oct. 14
Pattern-recognition logic analyzes infrared signals p. 112 Nov. 11
Picture that—graphical data processor ER p. 37 May 13
Punched cards on the ropes? NP p. 193 Apr. 15
Reader welcomes characters who make a bad impression NP p. 153 Oct 28
Starry-eyed mosaic—solid state photomosaic device ER p. 54 May 27

PHOTOGRAPHY
Accentuating the negative—processing machine uses microwaves to dry movie film ER p. 48 Mar. 4
Cranking out masks—computer-controlled masking camera does step-and-repeat work ER p. 38 Jan. 22
France: Stress on holograms EA p. 197 May 13
Great Britain: Behold the fringe—applying holography to vibration analysis EA p. 195 Jan. 22
Holograms—seen from afar ER p. 40 Apr. 29
Improving the mask-maker's image p. 78 Feb. 5
Infrared camera takes a big picture NP p. 221 Aug. 5
Infrared camera costs but $10,000 NP p. 202 Sept. 16
Japan: Exposure by CI EA p. 221 July 8
Japan: It's a snap—CdS devices EA p. 235 Feb. 19
Making it in pictures p. 130 Apr. 15
Netherlands: Right-light chip—monolithic IC for electronic cameras EA p. 172 Sept. 2
Photographic printer controlled by UJT-SCR timer p. 96 Mar. 18
Synchronizing a camera with a flash tube p. 119 Nov. 11
3-D in sequence: Holographic "movies" ER p. 74 Nov. 11
Vesicular photographic film ER p. 74 Nov. 11
Weld watcher ER p. 62 June 10
Making it simple, easy to operate NP p. 202 Mar. 18
Oscillator as detector p. 95 Mar. 18
Oscillator serves many functions NP p. 119 Apr. 29
Pick a color—continuous parametric optical oscillator ER p. 52 Apr. 15
30-Ghz amplifier has 600-Mhz bandwidth NP p. 149 Sept. 2
Tiny tee in attenuator increases range NP p. 123 Apr. 29
Tunable magnetron reaches X band NP p. 149 Jan. 22
Two impatts: less noise or less money NP p. 169 Oct. 28
Utilities go slow on automation p. 125 Sept. 30
Wideband amplifier has 2 magnetrons NP p. 198 Mar. 18

MILITARY ELECTRONICS
About face—Pentagon's small purchases ER p. 50 Jan. 8
After Vietnam ED p. 23 Apr. 15
Age of protest—computer manufacturers challenge Air Force on contract award ER p. 48 Jan. 8
Air Force—Waiting for Awacs ER p. 46 July 22
Air Force gets new, economy BUIC p. 159 Sept. 16
Air Force malfunction system—First AIDS ER p. 50 May 27
Airborne military transceiver finds room in crowded spectrum p. 133 Apr. 15
Army—Automating the whole shooting match p. 171 Mar. 4
Army—Combat Service Support Systems ER p. 58 June 24
Army wants shockproof memories ER p. 42 July 22
AWACS—on the flight line, but ER p. 54 June 24
AWACS wins approval—Crisis of identity ER p. 54 Sept. 30
Belgium: Contract for 300 Leopard tanks EA p. 200 May 13
Counterrevolution — Fixed-price contracts under fire ER p. 62 Nov. 11
Defense Department's budget—Encore for Pentagon's juggling act p. 139 Feb. 19
Defense Dept. slates reform of systems engineering management p. 153 Sept. 16
Defense Dept studying the reliability of self-destruct mechanisms for electronic espionage gear ER p. 48 Apr. 29
Designers up in air over specs p. 165 Sept. 16
Detection system—Alarming vibrations ER p. 42 Dec. 23
Drafting computers ER p. 44 Mar. 4
Election issues for electronics p 139 Oct. 28
Federal budget—An uncertain guide for suppliers p. 137 Feb. 19
Great Britain: Light brigade EA p. 275 Apr. 15
Guaranteed results—defense industry objects to proposal to require a warranty on "technical data packages" ER p. 56 Sept. 16
International: Aerospace tutorial—NATO's Advisory Group for Aerospace R&D EA p 246 May 27
Keeping track of the action—multicolored dynamic projections, speed commands or management decisions p. 92 Aug. 5
Khaki kitchen—program for subsistence preparation by electronic energy diffusion ER p. 46 Mar. 4
Laser range finders ER p. 74 Nov. 11
Laser safety issue burning bright p. 193 Nov. 11
Memories shot from guns p. 98 Feb. 5
Modular air computer ER p. 44 May 27
NASA seeks to fill post-Apollo void p. 145 Feb. 19
Navy: raising Cains ER p. 42 Dec. 23
Navy drafts standard hardware—uniform electronic modules for fire-control system of Poseidon missile p. 171 Apr 15
Navy study to determine the equipment and personnel required to service all aircraft ER p. 64 Aug. 5
Navy's USS New Jersey: Off to the wars—again p. 121 Feb. 5
Night sight ER p. 56 Aug. 19
No metric Maverick ER p. 46 July 22
Numbers game—MTBF system criticized ER p. 46 Jan. 8
Painful surgery...defense-spending reduction ER p. 50 June 24
Plastic IC's still 4-F ER p. 45 Apr. 15
Plastic's progress—plastic-encapsulated ICs ER p. 60 July 8
Poseidon and Minuteman are essentially missile bombers ER p. 46 Sept. 2
Proect Mallard: for the birds ER p. 54 Feb. 19
Radiation-resistant IC—lining up ER p. 52 Oct. 28
Radiation-resistant thyristors: here's a good switch p. 65 Apr. 1
Radiation testing guidelines p. 122 June 10
Skipping the hard part of radiation hardening p. 122 Mar. 4
Solid state radar—Half step ER p. 43 May 27
Sonar sub-systems testing ER p. 66 June 10
Stretching the sinews of war p. 106 Jan. 8
West Germany: It's a snap—IC's on camera shutter EI p. 203 Oct. 28
West Germany: Quick as a flash EI p. 136 Dec. 23
X rays can find wafer imperfections p. 165 May 27

POWER SUPPLIES
Adding a transformer halves uhf frequencies p. 87 Mar. 4
Boosting accuracy in d-a conversion NP p. 188 May 27
Bootstrapping bias supply increases IC voltage capacity p. 90 Oct. 28
Bridge rectifier clips dangerous voltages p. 89 Mar. 4
Busbar blocks high-frequency noise NP p. 135 Aug. 19
Cable assemblies get the thin look NP p. 206 Apr. 15
Capacitor slows down stabilized power supply p. 123 Nov. 11
A challenge for the power industry ED p. 31 Nov. 11
Collector clamping improves threshold detector p. 81 Sept. 30
Converter delivers energy by the spoonful NP p. 173 Aug. 19
Current limiter improves power supply p. 122 Nov. 11
Electronic switch is a random thing NP p. 254 Nov. 11
Feedback circuit keeps motor's torque constant p. 72 Sept. 2
Feedback protects spacecraft's power supply p. 91 Jan. 8
Fuse blows in a millisecond NP p. 120 Nov. 25
High lighting: electroluminescent panels for aircraft ER p. 46 June 10
Low-cost supply has 1-ppm regulation NP p. 213 Oct. 14
Modulation current supplied by op amp p. 107 Aug. 5
Modulator works with hangers-on NP p. 258 Nov. 11
Multiplier stages replace power-supply transformer p. 84 Dec. 9
Op amp boosts pick-up voltage p. 108 Aug. 5
Photoresistor coupler switches in 1 ms NP p. 212 Aug. 5
A pulse every millisecond is Rx for hysteresis ills p. 63 Apr. 1
Regulator has .005% control NP p. 162 July 8
Relay: small, industrial relay costs $10 NP p. 150 Aug. 19
Rule of thumb for ripple calculations p. 87 Aug. 19
Shunt regulator provides dual output voltages p. 121 Oct. 14
SCR permits d-c compromise NP p 194 Sept. 16
Small supply has an IC regulator NP p 198 Sept. 16
Taking noise out of weak signals p. 80 July 8
Transistor replaces bleeder and regulates power supply p. 70 Jan. 22
Voltage regulator built from two AND gates p. 57 Dec. 23
Voltage sensor limits discharge in batteries p. 62 Apr. 1
Zener power supply answers current problem p. 71 Jan. 22

PRINTED WIRING
Easing the circuit designer's job NP p. 200 Sept. 16
Etching: How to stretch the etchant NP p. 206 Jan. 8
Printed-circuit boards by low-cost die stamping process ER p. 34 Apr. 1

PROCUREMENT
About-face—Pentagon's small purchases ER p. 50 Jan. 8
Age of protest—computer manufacturers challenge Air Force on contract award ER p. 48 Jan. 8
All-purpose scapegoat ED p. 23 Jan. 8
Budget trims some space programs p. 117 Jan. 22
Counterrevolution — Fixed-price contracts under fire ER p. 62 Nov. 11
Defense Department slates reform of systems engineering management p. 153 Sept. 16
Defense Department's budget—Encore for Pentagon's juggling act p. 139 Feb. 19
Electronics Markets 1968: State of the mart; gains slowed by war priorities p. 105 Jan. 8
Federal budget—An uncertain guide for suppliers p. 137 Feb. 19
Federal outlets tough for foreigners p. 119 Dec. 9
Grounding the middlemen ER p. 42 Apr. 29
Guaranteed results—defense industry objects to proposal to require a warranty on "technical data package" ER p. 56 Sept. 16
Hit the dirt!—Sen. Proxmire's blast at DOD's system of providing Government-owned machinery to private contractors ER p. 48 Jan. 22
McNamara's parting shot Is almost on target ED p. 23 Apr. 29
NASA future earthbound by economics p. 169 Oct. 14
One-way street to a dead end ED p. 23 Mar. 4
Pentagon award shows how competition can cut prices ER p. 62 July 8

That's a switch—investigation of defense contracting practices ER p. 60 July 8
War puts agencies on short rations p. 151 Feb. 19

PRODUCTION TECHNIQUES

Accelerometer has cut-rate price NP p. 185 June 10
Automating all along the line p. 88 Nov. 25
Batch view—light-emitting diode arrays ER p. 52 Feb. 19
Beam leads vs. flip chips
Part 1: In search of a lasting bond p. 72 Nov. 25
Part 2: Rival preleading schemes head for a market showdown p. 88 Dec. 9
Bell Canada's R&D arm, Northern Electric, develops reach p. 125 May 13
Bright idea—monolithic array of gallium-arsenide light-emitting diodes ER p. 53 Oct. 14
Chip capacitors tested automatically NP p. 217 June 10
Climate for growth is inside cathode NP p. 278 Nov. 11
Cool stripper—r-f removes photoresist ER p. 56 July 8
Cranking out masks — computer-controlled masking camera does step-and-repeat work ER p. 38 Jan. 22
Design-it-yourself trend invades LSI technology NP p. 105 Apr. 1
Dopant diffusion done without gas NP p. 242 Oct. 14
Double deposit means more gates NP p. 225 Mar. 18
Fabrication advances boost potential of avalanche diodes p. 96 July 8
First with the fastest—Motorola will soon offer this large-scale integrated eight-bit adder ER p. 46 Apr. 15
Flexible thin-film transistors stretch performance, shrink cost p. 100 Aug. 19
Getting beneath the surface of multilayer IC's p. 84 July 22
Gold diffusion alternative ER p. 58 Oct. 28
Goldilox technique to seal IC's hermetically ER p. 42 Apr. 1
Great Britain: Mortal coils—etched coils for scanning deflection EA p. 238 Sept. 16
High-rise hybrids cut package size NP p. 223 Mar. 18
Hooked on anything—the Splicemaster NP p. 141 July 22
Improving the mask-maker's image p. 78 Feb. 5
Infrared technique for ultrasonic flip-chip bonder NP p. 177 Feb. 19
IEEE product preview
Tabs ease bonding p. 190 Mar. 4
Probes run hot and cold p. 194 Mar. 4
Integrating agc ER p. 46 Feb. 5
IBM going monolithic? ER p. 50 Oct. 28
Ion-implant serendipity ER p. 55 Nov. 11
Isolated success—dielectric isolation technique for developing linear IC operational amplifier ER p. 44 Jan. 22
Isolation problems get an airing—planar air technique p. 75 Apr. 29
Japan: Empty shelf—DECL's on prototype production line EI p. 134 Dec. 23
Japan: Isolationists EI p. 204 Oct. 28
Japan: It's a snap—CdS devices EA p. 235 Feb. 19
Japan: Oriental etchings—silicon transistor production process EA p. 269 Aug. 5
Japan: Put it on the line—scribe fabrication technique EI p. 307 Nov. 11
Japan: Quick curtain—polycrystalline isolation techniques EI p. 209 Sept. 30
Japanese IC technology—a closeup p. 98 May 13
Laser takes routine job on assembly line NP p. 183 Sept. 30
Light reading—photoconductive arrays on single substrates ER p. 50 Aug. 19
Low-budget films ER p. 31 Apr. 1
Matched magnets in five seconds NP p. 177 Feb. 5
Micron-size transistors ER p. 56 Oct. 28
Molten resins speed fastening NP p. 162 Aug. 19
No fresh air for degreaser's solvent NP p. 233 Mar. 4
A non-precious thick-film paste is thallium-oxide compound NP p. 180 Sept. 16
On your mark . . . get set . . . go!—digital position indicator NP p. 209 May 27
Outflanking suppliers in the reed-relay field NP p. 171 Jan. 8
Photoresist applied automatically NP p. 183 June 24
Probe lights up to verify IC logic state NP p. 275 Nov. 11
A pulse every millisecond is Rx for hysteresis ills p. 63 Apr. 1
RC-biased Schmitt trigger times pulse accurately p. 64 Apr. 1
Semiconductor firms' captive lines capture defense contractors' fancy p. 129 July 8
Single-sheet capacitors NP p. 214 Aug. 5
Soldering — low-melting solder eases assembly NP p. 161 Aug. 19
Spider bonding technique ER p. 58 Sept. 16
Splendid isolation — dielectric approach yields premium, competitive op amp NP p. 187 Feb. 5
Spreading it thin: plasma sputtering ER p. 54 June 10
Squaring off at Motorola — rectangular slice for silicon ingots ER p. 53 Sept. 16
Substrate window—beam leads on the substrate ER p. 52 Aug. 19
System grows 50,000-chip crystals NP p. 215 June 10
Tester takes all comers NP p. 184 Sept. 30
TI gearing to mass-produce large-scale integrated circuit entry ER p. 45 Feb. 19
Through thick and thin with infrared beams p. 101 Mar. 18
Transistor sorter — stepping up performance classifications NP p. 121 Apr. 1
Turned off on real time—no computer for IC processing ER p. 64 Apr. 15
Ultrasonic probe measures wall thickness NP p. 179 Feb. 5
Unlocking the gates for UJT's p. 56 Apr. 1
West Germany: Made for monolithics EA p. 244 May 27
West Germany: On the spot — semiautomatic wiring equipment EI p. 147 Nov. 25
Window trimming—laser technique to adjust IC resistors after packaging ER p. 54 Feb. 5
Wire stripping machine is a fast changer NP p. 210 Jan. 8
Yag laser cuts narrow swath in resistors NP p. 225 Oct. 14

PULSE TECHNIQUES

Charts simplify prediction of noise from periodic pulses p. 62 Sept. 2
Circuit divides pulses without binary counters p. 81 Sept. 30
Flip-flop isolates pulse from switch bounce p. 84 Aug. 19
Great Britain: Gunned-up pulses EA p. 171 Sept. 2
Multiplexing the LSI way: telemetry module ER p. 45 June 10
No need to juggle equations to find reflection—just draw three lines p. 93 Oct. 28
Power transistor's r-f gain measured by brief pulse p. 105 Apr. 15
Pulse generator is supply and temperature independent p. 106 May 27
Pulse generator takes to the field NP p. 123 Nov. 25
Stretching video pulse keeps indicator on p. 90 Mar. 4
Tracking with pulses ER p. 39 May 13

RADAR

Air Force gets new, economy BUIC p. 159 Sept. 16
Air traffic control: the waiting game p. 111 Sept. 2
Experimental phased array radar ER p. 56 Aug. 19
Ferrites' attraction is magnetic and growing p. 104 Oct. 14
Great Britain: Gem of a delay EA p. 254 Mar. 18
Great Britain: Insect early warning EA p. 186 Aug. 19
Great Britain: Sharper look—transponders' market EI p. 212 Sept. 30
Happy landings ER p. 48 Apr. 29
Impatt impact—microwave radar "trap" ER p. 37 Apr. 29
In step: solid state phased-array radars ER p. 47 Feb. 5
IEEE product preview: Shifting into the future p. 188 Mar. 4
Italy: meteorological radar system EA p. 164 July 22
Japan: Space hardware—laser radar EA p. 235 Feb. 19
L-band magnetron delivers 2 megawatts NP p. 229 Oct. 14
Laser viewing system can "see" through rain, fog ER p. 44 Dec. 23
A little millimeter radar ER p. 40 Mar. 4
Potential of phased-array radar spurs increasing R&D activity p. 94 Sept. 2
Putting the squeeze on radar signals p. 86 Jan. 22
Radar testing with less weight NP p. 158 Aug. 19
Random noise radar ER p. 41 July 22
Raytheon Co. plans plant ER p. 56 Feb. 5
Solid state radar—Half step ER p. 43 May 27
Testing on the wing p. 81 Apr. 29
Touching down: helicopter landing system ER p. 48 June 24
Tracking with pulses ER p. 39 May 13
Waiting for Awacs ER p. 46 July 22
Wave of optimism for millimeter waves p. 151 Mar. 18
West Germany: Double coverage—air traffic control radar EA p. 260 June 10
West Germany: Road test—Daimler-Benz test track loaded with electronics EA p. 196 Jan. 22

RAILROADS

Fare price—IBM system will automatically deduct fares from a magnetically coded card ER p. 58 July 8
Great Britain: Track record EA p. 275 Apr. 15
Japan: Roundhouse swing EA p. 316 Mar. 4
West Germany: Training aid—more automation EA p. 147 Apr. 29

RECORDERS

C-5A recorder ready for other jobs NP p. 189 Sept. 16
Data recorders pack it tight NP p. 238 Mar. 4
Diodes prevent overload by limiting input's slope p. 69 Jan. 22
Great Britain: Sound thought—preamplier for hi-fi EI p. 309 Nov. 11
Integrated circuits in action: Part 9 Digital techniques shrink recorder p. 93 Jan. 8
IBM keyboard-to-magnetic-tape units ER p. 64 May 27
Japan: An eye for curves—tv reader converts curves on charts into series of digital values EA p. 245 Jan. 8
Japan: Good tip—low-distortion phonograph pickup EA p. 170 Sept. 2
Magnetic tape transport for airborne recorders ER p. 42 Apr. 1
Medical data recorder NP p. 157 Dec. 9
Packing 33 channels on ¼-inch tape NP p. 113 Apr. 1
Recorded voice alerts pilots NP p. 171 Feb. 19
Recorder can go to the action NP p. 225 Apr. 15
Recorder heads good for 5,000 hours NP p. 141 May 13
Sensor-recorder system NP p. 147 Jan. 22
Servo potentiometer charts many courses NP p. 235 Apr. 15
7-inch record plays for two hours on each side ER p. 65 Apr. 15
Stay-put styluses plot 128-khz signals NP p. 215 May 27
A tv film special—electron-beam recorder ER p. 51 Mar. 4

RECTIFIERS

Bridge and amplifier monitor d-c level p. 99 June 24
Corrected version p. 71 Sept. 2
Bridge rectifier clips dangerous voltages p. 89 Mar. 4
Toward tubeless tv—high-voltage rectifier ER p. 42 Mar. 4

RELIABILITY

Beam leads vs. flip chips
Part 1: In search of a lasting bond p. 72 Nov. 25
Part 2: Rival preleading schemes head for a market showdown p. 88 Dec. 9
Getting beneath the surface of multilayer ICs p. 84 July 22
Industry nips at consumers' watchdog p. 170 Aug. 5
Numbers game—MTBF system criticized ER p. 46 Jan. 8
Plastic IC's still 4-F ER p. 45 Apr. 15
Putting the stress on IC reliability p. 149 May 27
Semiconductor firms' caotive lines capture defense contractors' fancy p. 129 July 8
Visual inspection of IC's boosts reliability at little cost p. 104 Aug. 19

RESEARCH & DEVELOPMENT

ARPA network will represent integration on a large scale p. 131 Sept. 30
Automated technician ER p. 60 May 27
Bell Canada's R&D arm, Northern Electric, develops reach p. 125 May 13
Census Bureau depends on electronics to make its 1970 national nose count p. 103 July 22
Charting innovation ED p. 23 Feb. 19
Comsat labs to share new home p. 133 Oct. 28
Cornell University will sell its Aeronautical Lab to EDP Technology Inc. ER p. 56 Sept. 30
Data banks overdrawn ER p. 53 Feb. 19
FAA priorities irk critics p. 155 Feb. 19
FCC contract to Stanford for communications research ER p. 50 July 22
France: Mover and shaker, Pierre Aigrain EA p. 256 Mar. 18
From another Iron Mountain—"Technological innovation in civilian public areas" ED p. 23 Jan. 22
JPL up in the air over space role p. 101 Apr. 1
Laser series I Laser research takes a practical turn p. 110 Sept. 16
NASA seeks to fill post-Apollo void p. 145 Feb. 19
NASA's technology utilization program—Hard selling technology p. 111 Jan. 22
Potential of phased-array radar spurs increasing R&D activity p. 94 Sept. 2
Project Themis ER p. 48 Jan. 22
Recombination radiation: New way to look at it ER p. 51 Nov. 25
Reporting "breakthroughs" ER p. 40 Dec. 23
Soviet Union: Getting a ruble's worth EI p. 310 Nov. 11
Survival kit ED p. 31 Sept. 16
War puts agencies on short rations p. 151 Feb. 19
Soviet Union: Integration drive—mass production of IC's EA p. 277 Apr. 15

SEMICONDUCTORS

Beam leads vs. flip chips
Part 1: In search of a lasting bond p. 72 Nov. 25
Part 2: Rival preleading schemes head for a market showdown p. 88 Dec. 9
Dopant diffusion done without gas NP p. 242 Oct. 14
Fairchild shakeup ER p. 52 July 8
C. Lester Hogan, new president and chief executive officer ER p. 45 Aug. 19
Fairchild-Motorola Act Two ER p. 40 Sept. 2
Fairchild vs. Motorola ER p. 60 Sept. 16
Hogan takes hold at Fairchild p. 119 Sept. 30
Fairpak finale ER p. 58 Nov. 11
Great Britain: Behind the Gunn EA p. 245 May 27
Great Britain: Thin slices of silicon hold high promise EA p. 170 Sept. 2
Ion-implant serendipity ER p. 55 Nov. 11
Sales leadership: new optimism at two companies ER p. 38 May 13
Semiconductor firms' captive lines capture defense contractors' fancy p. 129 July 8
Splendid isolation—dielectric approach yields premium, competitive op amp NP p. 187 Feb. 5
Squaring off at Motorola—rectangular slice for silicon ingots ER p. 53 Sept. 16
Storing light and current in crystals p. 104 July 8
TI semiconductor plant in Curacao EA p. 214 Feb. 5
Unpackaged chips market picks up ER p. 47 Apr. 15
Unpackaged chips set for gains p. 117 May 13
West Germany: Feeling the heat—system measures the temperature of engine pistons EI p. 146 Nov. 25
X-rays can find wafer imperfections p. 165 May 27

SILICON CONTROLLED RECTIFIERS

Added terminal lets SCR turn on a crowd NP p. 283 Nov. 11
Inexpensive SCR regulator for consumer equipment p. 88 Feb. 5
Power level of SCR zooms NP p. 154 Aug. 19
SCR helps video signal gate a-c power line p. 66 Apr. 29
SCR permits d-c compromise NP p. 194 Sept. 16
SCR synchronizes gate p. 95 Mar. 18
SCR withstands high currents NP p. 207 June 10
SCR's monitor discharge rate p. 86 Aug. 19
Thick-film crowbar guards logic circuits NP p. 176 Sept. 16
This SCR is not for burning p. 96 Sept. 30
Zeners and SCR fire gas discharge tube p. 71 July 22

SIMULATORS

Airlines find electronic teachers cheaper, safer, and better than flight training p. 163 Apr. 15
Great Britain: Changing stations—computers will handle the computations needed to simulate reactor characteristics EA p. 271 Aug. 5
Hybrid computers II Choosing a simulation system p. 91 Sept. 30
Italy: Gassed up—computer simulates what goes on in gas transmission network EA p. 269 Aug. 5
Process trainer gives operators true picture NP p. 131 Jan. 22

SOLID STATE DEVICES

All-solid-state design overtakes large-screen monochrome tv sets p. 104 June 24
Ballasting a mercury-arc lamp with a solid-state circuit p. 130 Aug. 5
The box filled with echoes NP p. 184 Feb. 19
Calculating on MOS—off-line peripherals for clerical functions ER p. 48 Sept. 30
Car 54—Where are you?—mobile radio power transistor NP p. 186 Feb. 5
Cubic zener has low drift NP p. 200 May 27
D-a converter runs at 2 Mhz NP p. 192 Sept. 30
Doing it in color—all-solid state color models p. 107 June 24
Electronic switch is a random thing NP p. 254 Nov. 11
Electronics Markets 1968: The prospects are solid p. 109 Jan. 8
Electronics Markets 1968: Selective gains for the resourceful p. 135 Jan. 8
Europe: Fairchild readying a new assault on market EI p. 202 Dec. 9
Every data bit counts in transmission clean-up p. 77 Jan. 22
Everyman's test set for semiconductors NP p. 200 Jan. 8
Everything—including sink—in one package NP p. 211 Feb. 19
Fabrication advances boost potential of avalanche diodes p. 96 July 8
FET reaches for the high ground NP p. 131 Apr. 29
Frequency divider is low-cost MOS NP p. 212 June 10

Gated semiconductors clean a-c switching p. 105 May 27
Getting beneath the surface of multilayer ICs p. 84 July 22
Great Britain: Up the Hall—a Hall-effect transducer EA p. 212 Feb. 5
Gunn, John B., an IBM researcher granted a U.S. patent ER p. 56 Feb. 5
High-rise hybrids cut package size NP p. 223 Mar. 18
Impatt: 1968—year of the impatt NP p. 165 Feb. 5
IEEE product preview
Make, buy, and now sell IC's p. 187 Mar. 4
Reliability registers high p. 189 Mar. 4
Tabs ease bonding p. 190 Mar. 4
Regulation at the site p. 192 Mar. 4
Japan: A-c up to 100 watts is controlled by IC NP p. 208 Sept. 16
Lighting own way—light-emitting diode array ER p. 48 Apr. 15
Logic signals pull a discrete switch NP p. 183 Feb. 5
Making it: Ovonic switch ER p. 49 Nov. 25
Meeting specifications—after radiation NP p. 197 May 27
MOS FET devices invade tube preserve NP p. 151 Sept. 30
MOS multiplexer switches can do well at high frequencies p. 152 Nov. 11
MOS used as capacitor in diode package NP p. 265 Mar. 4
Photoresistor coupler switches in 1 ms NP p. 212 Aug. 5
Remembering the MOS ER p. 38 Apr. 29
Semiconductor gages make sense in most transducer applications p. 109 Mar. 18
SiN_4 for MOS FET's ER p. 46 May 27
Solid-state display nears market p. 95 July 22
Solid state module makes for light reading p. 74 Sept. 2
Solid state radar—Half step ER p. 43 May 27
Solid state thyratron challenges tubes NP p. 159 July 8
Solid view—replacing the vidicon ER p. 53 Oct. 14
Switches combine speed and power NP p. 159 May 13
The transistor: Two decades of progress—special report p. 77 Feb. 19
The improbable years p. 78 Feb. 19
Fingers in the die p. 93 Feb. 19
A worthy challenger for r-f power honors p. 98 Feb. 19
A discrete transistor that's a powerhouse p. 105 Feb. 19
Fabrication control is key to microwave performance p. 109 Feb. 19
A switch in time p. 116 Feb. 19
An old-timer comes of age p. 120 Feb. 19
Transistors: a chapter ends, but the story continues p. 126 Feb. 19
The triac—from trickle to triumph in three years NP p. 169 Feb. 19
Tuner for all channels ER p. 46 Feb. 19
Two photoresistors share the light NP p. 182 Jan. 8
Unlocking the gates for UJT's p. 56 Apr. 1
Unpackaged chips set for gains p. 117 May 12

SPACE ELECTRONICS

Aeronautical Services Satellite—Breaking the logjam ER p. 48 May 27
Aeronautical Services Satellite—Speculative proposal ER p. 44 Sept. 2
Aerospace Industry keeps its cool p. 175 Oct. 14
Astronomy—Radio Astronomy Explorer (RAE-A) ER p. 50 July 22
Australia: U.S. space base EA p. 186 Aug. 19
APT to grow ER p. 58 May 27
ATS-F—loaded mission p. 103 Dec. 23
Budget trims some space programs p. 117 Jan. 22
Canada: Bouchette, earth station EI p. 272 Oct. 14
Comsat labs to share new home p. 133 Oct. 28
Drawn to magnetics—memory being developed for NASA ER p. 46 Dec. 9
The earth: a neglected spacecraft ED p. 23 Apr. 1
Election issues for electronics p. 139 Oct. 28
Electronics Markets 1968: The fiscal squeeze tightens p. 130 Jan. 8
Fast talk ER p. 56 June 10
For NASA: days of decision ED p. 31 Oct. 14
Great Britain: Thin solar cells EI p. 145 Nov. 25
Ground-station market flies high p. 105 Nov. 25
Growing flock of birds Ek p. 56 Mar. 18
International: Changes loom for Europe's space efforts EA p. 200 May 13
JPL up in the air over space role p. 101 Apr. 1
NASA—Happy birthday? ER p. 50 Sept. 30
NASA at the crossroads ED p. 23 June 24
NASA budget—first slice ER p. 56 Mar. 18
NASA budget cuts . . . means less space ER p. 54 June 24
NASA future earthbound by economics p. 169 Oct. 14
NASA seeks to fill post-Apollo void p. 145 Feb. 19
NASA will launch the second of four Orbiting Astronomical Observatories ER p. 72 Nov. 11
NASA's technology utilization program—Hard selling technology p. 111 Jan. 22
Navigation converter talks two languages—computer device NP p. 151 Feb. 5
New year in space—Surveyor 7 and Apollo 5 ER p. 54 Jan. 8
Nimbus B will be replaced ER p. 50 July 22
Pioneer D—convolutional coding technique cuts errors ER p. 36 Apr. 1
Precursor—NASA test and training satellite ER p. 64 May 27
750 largest company presidents to rate the space program in eight basic areas ER p. 56 Jan. 8
Sighting in on narrow light beams p. 106 Mar. 18
Space transmission method uses electric-optic crystal ER p. 47 Aug. 19
Starry-eyed mosaic—solid state photomosaic device ER p. 54 May 27
Surveyor 7's spectacular performance ER p. 48 Jan. 22
Symphonie satellite—Fiddling with Symphonie ER p. 46 Apr. 29
Viking is here ER p. 40 Dec. 23
Wave of optimism for millimeter waves p. 151 Mar. 18

STANDARDIZATION

Cleaning the spectrum ER p. 54 Feb. 19
Designers up in air over specs p. 165 Sept. 16
Great Britain: Reading the meter EI p. 204 Dec. 9
Industry nips at consumers' watchdog p. 170 Aug. 5
IC registration revisited p. 159 Mar. 18
Kitchen danger—potential hazards from microwave ovens ER p. 43 Sept. 30
Laser safety issue burning bright p. 193 Nov. 11
Pinning the blame ED p. 23 June 10
Radiation standards ER p. 52 Oct. 28

SYSTEMS ENGINEERING

Defense Department slates reform of systems engineering management p. 153 Sept. 16
Electronic traffic control: can it make the grade? p. 157 Apr. 15
Systems engineering for the airlines ED p. 31 Aug. 5

TELEMETRY

Cutting noise in data sampling p. 70 May 13
FFT—shortcut to Fourier analysis p. 124 Apr. 15
Great Britain: Comeback for Dynatel Ltd. EA p. 185 Aug. 19
Pioneer D: convolutional coding technique cuts errors ER p. 36 Apr. 1
Wave synthesizer accurate to .01% NP p. 143 Aug. 19

TELEVISION

All-solid state design overtakes large-screen monochrome tv sets p. 104 June 24
Bahamas: to start tv broadcasts in 1969 EA p. 249 Jan. 8
Between the lines—raster modification for tv ER p. 37 Jan. 22
Cameras that wink can produce 3-D tv p. 132 Mar. 18
CATV—Untangling cable tv ER p. 52 June 10
FCC gets CATV ER p. 60 June 24
A funny thing happened on the way to prosperity p. 114 Jan. 8
Great Britain: contract for tv transmitters EA p. 172 Sept. 2
Great Britain: Reins damp tv outlook EI p. 146 Nov. 25
Great Britain: Unto the breach—line flyback period used for audio EI p. 211 Sept. 30
Image-intensifying electronic devices study: Getting the picture . . . ER p. 39 Jan. 22
IC's in tv's ER p. 56 July 8
Japan: An eye for curves—tv reader converts curves on charts into series of digital values EA p. 245 Jan. 8
Japan: Crystal clear—X-ray crystallography EA p. 169 Sept. 2
Japan: Facsimile palette—still color photos by facsimile EA p. 257 June 10
Japan: Playback platter EA p. 315 Mar. 4
Japan: Pocket video—tv set with 2-inch screen EA p. 243 May 27
Japan: Sayonara to flybacks—piezoelectrics for tv EA p. 315 Mar. 4
Japan: Sound vision—ultrasonic tv EA p. 169 Sept. 2
Japan: Through channels—Uhf tuner EA p. 210 Feb. 5
Japan: Topics (total on-line program and information control system) EI p. 205 Oct. 28
Japan: World's highest tv tower EA p. 262 June 10
Lights out—black-face cathode ray tube ER p. 45 Jan. 8
Millimiter tv ER p. 48 Apr. 29
New terminals in display picture p. 159 Jan. 8
One-shot rainbow—one-gun, one-phosphor color cathode-ray-tube ER p. 37 Jan. 22
. . . others go solid—component producers pushing for tubeless tv ER p. 56 July 8
School work—experimental computer-assisted instruction system has conventional tv sets and pushbutton telephones ER p. 56 Feb. 5
SCR helps video signal gate a-c power line p. 66 Apr. 29
Solid view—replacing the vidicon ER p. 53 Oct. 14
Some push tubes . . .—RCA offering nine-pin miniature tubes: GE pushes its Compactron tubes ER p. 54 July 8
Technique that replaces photo-conductive coatings (usually antimony trisulfide) in standard tv camera vidicon tubes with a silicon diode array ER p. 39 Apr. 29
A tv film special—electron-beam recorder ER p. 51 Mar. 4
Tv tuner tuned to ease of repair NP p. 247 Mar. 4
Tiny transformer wants tv job NP p. 216 Aug. 5
Toward tubeless tv—high-voltage rectifier ER p. 42 Mar. 4
Tuner for all channels ER p. 46 Feb. 19
Turkey: tv will be introduced EA p. 241 Feb. 5
Uhf triodes aim to plant tricolor NP p. 167 Feb. 5
Underwater eyes: laser-television system ER p. 45 June 10
Up camera—tv periscope ER p. 42 July 22
West Germany: Ghost chaser—tv antenna will have a unique radiation pattern EA p. 270 Aug. 5
West Germany: The low road—two-transistor circuit EA p. 237 Feb. 19
West Germany: System that transmits still images over standard telephone lines EA p. 248 May 27

TESTING

Capacitance bridge test is automatic—to a point NP p. 141 Aug. 19
Chip capacitors tested automatically NP p. 217 June 10
Circuit tester does double duty NP p. 160 Dec. 9
Computer-oriented system speeds testing of circuits and components p. 72 July 22
Converter handles high-speed-spin signals NP p. 238 Aug. 5
Curve tracer shows scale and beta NP p. 149 Oct. 28
Curve tracer tests logic IC quickly p. 98 June 24
Dynamic IC testing made easy p. 74 Sept. 30
Dynamic tests for op amps use synchronous demodulation p. 118 Aug. 5
Everyman's test set for semiconductors NP p. 200 Jan. 8
FET tester keeps out the 'zot' NP p. 149 May 13
Finding a FRIEND: IC tester ER p. 58 June 10
Finding leaky IC's on p-c boards p. 127 June 24
FDR: a new deal for faultfinders p. 96 Aug. 19
Getting beneath the surface of multilayer IC's p. 84 July 22
Height of sophistication in in-flight monitoring p. 78 May 13
In phase—new way to test crystals ER p. 48 Apr. 15
Industry nips at consumers' watchdog p. 170 Aug. 5
IC testers: stepping up in class NP p. 192 May 27
IC testing tries to keep up with gains in IC technology p. 88 May 13
Japanese-made IC probe—Saying sayonara to U.S. testers NP p. 204 Jan. 8
Large-scale problems in LSI testing p. 99 Nov. 25
LST arrives at terminal before LSI NP p. 160 Feb. 5
Linear IC tester checks 22 values NP p. 223 Apr. 15
Measuring up to standards NP p. 191 Feb. 19
Meeting specifications—after radiation NP p. 197 May 27
Module tester will help speed repairs on aircraft navigations and radio equipment ER p. 60 June 24
On-the-spot tests for relay links NP p. 196 Jan. 8
Outside testing ER p. 50 Mar. 18
Pinning the blame ED p. 23 June 10
Putting the stress on IC reliability p. 149 May 27
Radar testing with less weight NP p. 158 Aug. 19
Radiation testing guidelines p. 122 June 10
Scanner puts it on the line NP p. 121 Dec. 23
Skipping the hard part of radiation hardening p. 122 Mar 4
Sonar sub-systems testing ER p. 66 June 10
Sorting out the tires p. 125 Mar. 18
Spectrum analysis for only $1,300 NP p. 193 June 10
Spotting faults—visual inspection of IC's by computer ER p. 48 Mar. 4
Stretching video pulse keeps indicator on p. 90 Mar. 4
Test-set kit for plant or shop NP p. 188 Jan. 8
Tester measures resistance of multilayer p-c boards p. 100 Sept. 16
Tester takes all comers NP p. 184 Sept. 30
Testing on the wing p. 81 Apr. 29
A 'testy' attitude ED p. 23 June 10
Transistor sorter stepping up performance classifications NP p. 121 Apr. 1
Tremble tester has 3% accuracy NP p. 230 Aug. 5
Using a universal pulser for a-c checks of IC flip-flops p. 120 May 27
Wescon preview: IC testers, op amps star p. 191 Aug. 5
Fast testing without frills p. 191 Aug. 5
Tester takes to any op amp p. 192 Aug. 5
Comparing with the best p. 193 Aug. 5
See-as-you-go IC tester p. 194 Aug. 5
Miniflaws spotted inexpensively p. 197 Aug. 5
West Germany: Road test—Daimler-Benz test track loaded with electronics EA p. 196 Jan. 22
X-rays can find wafer imperfections p. 165 May 27

THIN FILMS

Filter on a slice—monolithic crystal filter ER p. 45 Sept. 30
Flexible thin-film transistors stretch performance, shrink cost p. 100 Aug. 19
Low-budget films ER p. 31 Apr. 1
Memory technology—report
IV Low costs for longer words p. 115 Oct. 28
V Plated wire: a long shot that's paying off p. 124 Nov. 11
VI Rods look like wires, act like cores p. 128 Nov. 11
VII Weaving wires for aerospace jobs p. 131 Nov. 11
Nordic trigger pulled by light NP p. 170 Dec. 9

TIMERS

Clockmaker counts on IC's NP p. 193 Sept. 16
Great Britain: Light hands—electronic clock uses light for "hands" EI p. 134 Dec. 23
Motorless timer has long life span NP p. 173 May 13
Photographic printer controlled by UJT-SCR timer p. 96 Mar. 18
West Germany: New twist on time—piezoelectric mechanism EI p. 204 Oct. 28

TRANSISTORS

All-solid state design overtakes large-screen monochrome tv sets p. 104 June 24
Ballasting a mercury-arc lamp with a solid-state circuit p. 130 Aug. 5
Boosting op-amp output with two transistors p. 110 June 10
Bridge and transistor are exclusive-or gate p. 88 Aug. 19
Car 54 — Where are you? — mobile radio power transistor NP p. 186 Feb. 5
Charting innovation ED p. 23 Feb. 19
Current, currency—a dual gain NP p. 220 Jan. 8
Curve tracer shows scale and beta NP p. 149 Oct. 28
Darlington transistors widen multivibrator's range p. 82 Nov. 25
Ferrites: Part 2 Circulators for vhf and up p. 84 Nov. 25
For low cost, count on RTL p. 74 Jan. 22
Germanium for LSI — monster array of 12,800 pnp transistors ER p. 52 Aug. 5
Great Britain: More with the MOST EA p. 253 Mar. 18
Great Britain: Up the Hall—a Hall-effect transducer EA p. 212 Feb. 5
Grounded-base amplifier mates npn to pnp p. 89 Feb. 5
High-grain transistors ER p. 54 Nov. 11
High-precision preamp built from 3 transistors p. 58 Dec. 23
High-voltage transistor switches fast NP p. 131 Nov. 25
Hybrid microwave developed for MERA ER p. 64 Sept. 16
Japan: Isolationists EI p. 204 Oct. 28
Japan: Oriental etchings—silicon transistor production process EA p. 269 Aug. 5
Meeting specifications—after radiation NP p. 197 May 27
Micron-size transistors ER p. 56 Oct. 28
Opening the MOS gate—read-only memories ER p. 45 Feb. 19
Power sealed in TO-3 case NP p. 169 Dec. 9
Power transistor's r-f gain measured by brief pulse p. 104 Apr. 15

Semiconductor gages make sense in most transducer applications p. 109 Mar. 18
Silicon power transistor for color tv sets ER p. 58 June 24
Silicon transistor power upped ER p. 46 Sept. 2
Single transistor rectifies agc signal p. 90 Jan. 8
Spider bonding technique ER p. 58 Sept. 16
Stepping up performance classifications-transistor sorter NP p. 121 Apr. 1
Thin-film transistors don't have to be drifters p. 88 Mar. 18
Third-order active filter uses three transistors p. 122 Oct. 14
The transistor: Two decades of progress—special report p. 77 Feb. 19
The improbable years p. 78 Feb. 19
Fingers in the die p. 93 Feb. 19
A worthy challenger for r-f power honors p. 98 Feb. 19
A discrete transistor that's a powerhouse p. 105 Feb. 19
Fabrication control is key to microwave performance p. 109 Feb. 19
A switch in time p. 116 Feb. 19
An old-timer comes of age p. 120 Feb. 19
Transistors: A chapter ends, but the story continues p. 126 Feb. 19
Transistor and relay regulate high voltages p. 70 July 22
Transistor and zener monitor calibration p. 102 June 24
Transistor and zener protect series regulator p. 92 July 8
Transistor circuit cancels inductive load effects p. 83 Dec. 9
Transistor increases zener's power capability p. 99 Sept. 16
Transistor replaces bleeder and regulates power supply p. 70 Jan. 22
Transistor replaces resistor and improves amplifier p. 92 Jan. 8
Transistor speeds up charging circuit p. 105 Aug. 5
TTL circuit has extra noise immunity NP p. 153 Aug. 19
TTL enters a numbers game NP p. 223 Nov. 11
Unijunction transistor controls stable one-shot p. 89 Jan. 8
UJT protects op amp from voltage transients p. 83 Nov. 25
Unlocking the gates for UJT's p. 56 Apr. 1
Unpackaged chips market picks up ER p. 47 Apr. 15
West Germany: The low road—two-transistor circuit EA p. 237 Feb. 19

TUBES

Coaxial tube works in C-band NP p. 230 Oct. 14
Deflected by digits ER p. 54 Sept. 30
Dusting process brightens picture NP p. 192 Mar. 18
Electron tube that can bake a cake in under four minutes ER p. 56 Mar. 4
France: Carpitron tube sold for use in in Britanny's Intelsat 3 ground station EI p. 136 Dec. 23
Graphite coatings are hard and porous NP p. 230 Nov. 11
Great Britain: instrument spots defects in metal tubing EA p. 128 Apr. 29
Great Britain: Shining example—image intensifier EA p. 271 Aug. 5
HP still selling tube designs ER p. 64 Oct. 14
Image-intensifying tubes—Bright future ER p. 50 June 10
Italy: First manufacturer of color tv picture tubes EA p. 248 May 27
Japan: Color it otherwise — "separated white" concept could lead to practical successors to the shadow-mask tube EA p. 194 Jan. 22
Japan: Elfin low-price tubes — In the groove EA p. 243 May 27
Japan: Three-shot gun—Trinitron EA p. 145 Apr. 29
Japan: 12-inch shadow-mask picture tube EA p. 248 Jan. 8
Keeping cool—projection cathode-ray tube ER p. 39 July 22
Klystron is tunable automatically NP p. 191 July 8
Laser's tubes a snap to change NP p. 144 May 13
Lights out—black-face cathode ray tube ER p. 45 Jan. 8
MOS FET devices invade tube preserve NP p. 151 Sept. 30
One-shot rainbow — one-gun, one-phosphor color cathode-ray-tube ER p. 37 Jan. 22
Photomultiplier dynode gives gain of 30 NP p. 226 Nov. 11
Readout tubes face a challenger NP p. 160 Oct. 28
Real-time reservation—computer-generated cathode-ray-tube displays ER p. 52 Aug. 5
Solid state thyratron challenges tubes NP p. 159 July 8
Sonle push tubes—RCA offering nine-pin miniature tubes; GE pushes its Compactron tubes ER p. 54 July 8
Technique that replaces photo-conductive coatings (usually antimony trisulfide) in standard tv camera vidicon tubes with silicon diode array ER p. 39 Apr. 29
Uhf triodes aim to plant tricolor NP p. 167 Feb. 5

ULTRASONICS

Infrared technique for ultrasonic flip-chip bonder NP p. 177 Feb. 19
Japan: Sound vision—ultrasonic tv EA p. 169 Sept. 2

VARACTORS

Great Britain: Thin slices of silicon hold high promise EA p. 170 Sept. 2
Varactor diodes search f-m band NP p. 248 Mar. 4

VIDEO RECORDERS

Coating extends life span of tape duplicating heads NP p. 189 Feb. 5
Getting a peak—CBS unveils EVR ER p. 38 Dec. 23
Golfers, burglars, how's your style? NP p. 160 Jan. 22
Home color—video tape recording ER p. 47 Feb. 19
Japan: Playback platter EA p. 315 Mar. 4
Laser recording ER p. 50 Mar. 18
Video tape recorders: longitudinal or helical scan? p. 80 Apr. 1
Vtr travels for on-the-spot recording NP p. 131 Apr. 1
Waiting for a home vtr? Don't hold your breath p. 102 Sept. 30

Author Index

Aasnaes, H. B. & T. J. Harrison, Triple play speeds a-d conversion p. 69 Apr. 29
Aghassi, J. J. et al, Here's a good switch: radiation-resistant thyristors p. 65 Apr. 1
Aiken, E., From help wanted to jobs wanted p. 157 Mar. 4
Solid-state display nears market p. 95 July 22
TTL makers switch their sales pitch NP p. 147 July 8
Al-Moufti, M. N. et al, Calculating Gunn-diode output p. 148 Nov. 11
Antonelli, D. et al, Zener simulates muscle signals p. 111 Jun 10
Arnold, W., Defense Department slates reform of systems engineering management p. 153 Sept. 16
Arnold, W. F. & P. A. Dickson, Laser safety issue burning bright p. 193 Nov. 11
Augustine, C. F., Field detector works in real time p. 118 June 24
Avera, C. B., SCR's monitor discharge rate p. 86 Aug. 19
Baade, O., One capacitor makes IC a pulse-width modulator p. 71 Sept. 2
Ball, J. V., There's no overcharge for fast-charged batteries p. 97 Jan. 22
Barney, W., Curve tracer shows scale and beta NP p. 149 Oct. 28
Graphics terminal displays attractive figure: under $10,000 NP p. 141 Dec. 9
Hogan takes hold at Fairchild p. 119 Sept. 30
MOS bandwagon starts rolling NP p. 173 Mar. 18
Need an LSI array with 96 gates? Orders filled in six weeks p. 121 July 22
New terminals in display picture p. 159 Jan. 8
Barone, A., P-i-n diodes turn on microwave bands faster p. 67 Apr. 29
Barone, F. J., & C. F. Myers, Getting beneath the surface of multilayer IC's p. 84 July 22
Bates, A. M., Memories IV Lower costs for longer words p. 115 Oct. 28
Becker, R., Inexpensive comparator reacts in 100 nanoseconds p. 70 Sept. 2
Beeh, R. C. M., Improving the mask-maker's image p. 78 Feb. 5
Beierwaltes, W. T., Wave analyzers: a bright future p. 62 July 22
Bell, L. S., High-current switch is driven by an IC p. 120 Nov. 11
Berger, P. et al, CBS nominates a convention hopeful p. 74 Aug. 19
Bessen, A., Pattern-recognition logic analyzes infrared signals p. 112 Nov. 11
Bildstein, P., Third-order active filter uses three transistors p. 122 Oct. 14
Birnbaum, B., Gate-to-source resistor stabilizes FET regulator p. 104 Apr. 15
Blaskeslee, T. B., Computer-oriented system speeds testing of circuits and components p. 72 July 22
Bodow, J., Guarding industry's electrical loads p. 86 Jan. 8
Boysel, L. L., Adder on a chip: LSI helps reduce cost of small machine p. 119 Mar. 18
Bray, K. J., FET keeps long staircase steps flat p. 94 Mar. 18
Breikss, I. P., IC's in action: Part 9—Digital techniques shrink recorder p. 93 Jan. 8
Brinton, J., Air Force gets new, economy BUIC p. 159 Sept. 16
Air Force plans new weather monitor p. 151 June 24
Computer with peripherals will rent for $40 a month NP p. 193 Oct. 14
Sylvania would rather switch p. 119 Aug. 19
Brody, P. & D. Page, Flexible thin-film transistors stretch performance, shrink cost p. 100 Aug. 19
Brooks, D. A., Unijunction transistor controls stable one-shot p. 89 Jan. 8
Brower, R., Taking noise out of weak signals p. 80 July 8
Bucci, W. J., Laser research takes a practical turn p. 110 Sept. 16
Wave of optimism for millimeter waves p. 151 Mar. 18
Budlong, J. P., Bridge and amplifier monitor d-c level p. 99 June 24
Corrected version p. 71 Sept. 2
Budych, I., Amplifier flattens ripple in d-c regulator p. 106 Apr. 15
Burkett, R., Feedback protects spacecraft's power supply p. 91 Jan. 8
Burkhardt, H. et al, Nova can't lose its instructions p. 76 Dec. 9
Busby, E. S., Feedback circuit keeps motor's torque constant p. 72 Sept. 2
Byers, K. G., Jr. & H. W. Denny, Measuring impedance with insertion loss p. 61 Apr. 1
Byrd, M. R. et al, Super-ECL speeds signals p. 124 Oct. 14
Caggiano, A. C., Operational amplifier simulates inductance p. 99 Sept. 16
Calkins, R., Dynamic tests for op amps use synchronous demodulation p. 118 Aug. 5
Candel, G. W., Sine waves become square, with symmetrical switch p. 74 May 13
Caplan, S. et al, Lighting up in a group p. 104 Mar. 4
Carley, D. R., A worthy challenger for r-f power honors p. 98 Feb. 19
Chan, W. & P. Mogensen, MOS multiplexer switches can do well at high frequencies p. 152 Nov. 11
Chapman, R., UJT protects op amp from voltage transients p. 83 Nov. 25
Cinque, G. M., Simple logic configuration compares 8-bit numbers p. 101 Sept. 16
Clausen, H. & R. B. Rusert, Isolation problems get an airing p. 75 Apr. 29
Cofer, J. W., Jr., Saving money on data transmission as signals take turns on party line p. 119 Apr. 15
Cohen, J. M., An old-timer comes of age p. 120 Feb. 19
Avoiding IC system design pitfalls p. 110 Aug. 5
Collins, J. D., Putting the squeeze on radar signals p. 86 Jan. 22
Converse, M. E., Multiplier stages replace power-supply transformer p. 84 Dec. 9
Corey, F. & J. D. Drummond, Industry nips at consumers' watchdog p. 170 Aug. 5
Cowdell, R. B., Charts simplify prediction of noise from pediodic pulses p. 62 Sept. 2
Power-line filters need specific specs p. 112 June 24
Curran, L., Airbus makers go two ways on avionics p. 157 Aug. 5
Automating the whole shooting match p. 171 Mar. 4
Beam leads vs. flip chips Part 1: In search of a lasting bond p. 72 Nov. 25 68
Part 2: Rival preleading schemes head for a market showdown p. 88 Dec. 9 68
Design-it-yourself trend invades LSI technology NP p. 105 Apr. 1
Designers up in air over specs p. 165 Sept. 16
Davis, T. J., Analog gate's output is cleaned up by FET p. 81 Nov. 25
deCastro, E. D. et al, Nova can't lose its instructions p. 76 Dec. 9
DeLoach, E. R., Transistor and zener monitor calibration p. 102 June 24
DeMaria, A. J., Mode locking opens door to picosecond pulses p. 112 Sept. 16
de Miranda, W. R. R., Visual inspection of IC's boosts reliability at little cost p. 104 Aug. 19
de Pian, L., Active filters Part 2: Using the gyrator p. 114 June 10
de Pian, L. & A. Meltzer, Active filters Part 3: Negative-impedance converters p. 74 Sept. 2
Part 4: Approaching the ideal NIC p. 105 Sept. 16
Demrow, R. I., Narrowing the margin of error p. 108 Apr. 15
Protecting data from the ground up p. 58 Apr. 29
Denny, H. W. & K. G. Byers, Jr., Measuring impedance with insertion loss p. 61 Apr. 1
Dickson, P. A., ARPA network will represent integration on a large scale p. 131 Sept. 30
Census Bureau depends on electronics to make its 1970 national nose p. 103 July 22
Comsat labs to share new home p. 133 Oct. 28
Federal Center broadens IBM horizons p. 145 June 24
Federal libraries cast a long shadow p. 123 July 8
Ground-station market flies high p. 105 Nov. 25
Hard selling technology p. 111 Jan. 22
Loaded mission for ATS-F p. 103 Dec. 23, 68
NASA future earthbound by economics p. 169 Oct. 14
Simulators go to the head of the class p. 163 Apr. 15
Dickson, P. A. & W. F. Arnold, Laser safety issue burning bright p. 193 Nov. 11
Domanski, S., Circuit divides pulses without binary counters p. 81 Sept. 30
Donnelly, F. E. Jr. et al, Motor gives reverse twist to the Intelsat 3 antenna p. 71 Apr. 1
Doyle, O., Busbar blocks high-frequency noise NP p. 135 Aug. 19
TTL enters a numbers game NP p. 233 Nov. 11
Drummond, J. D., Color tv scores big gains with small screens p. 136 June 10
Doing it in color p. 107 June 24
Waiting for a home vtr? Don't hold your breath p. 102 Sept. 30
Drummond, J. D. & F. Corey, Industry nips at consumers' watchdog p. 170 Aug. 5
Dunn, V. E., Circulators for vhf and up p. 84 Nov. 25
Eberle, A. C. & R. S. Snyder, Power multivibrator gives linear motion to control rods p. 69 July 22
Edwards, R., Fabrication control is key to microwave performance p. 109 Feb. 19
Elad, E., FET's resistance change trips heater control p. 65 Apr. 29
Ellermeyer, W., Voltage comparator is made with op amps and logic gates p. 91 July 8
English, M., Voltage regulator built from two AND gates p. 57 Dec. 23, 68
Fadner, W. L. Zener triggers a-c alarm circuit p. 122 Nov. 11
Fedde, G. A., Memories V Plated wire: a long shot that's paying off p. 124 Nov. 11
Fein, A. E., Detecting data errors boosts transmission accuracy p. 91 Jan. 8
Ferguson, J. G. et al, Keeping track of the action p. 92 Aug. 5
Fields, S. W., The triac—from trickle to triumph in three years p. 169 NP Feb. 19
Fields, S. W. & P. J. Schuyten, Signal gains for electronic music p. 93 Apr. 29
Finnell, J. T., Jr. & F. W. Karpowich, Guidelines for radiation testing p. 122 June 10
Skipping the hard part of radiation hardening p. 122 Mar. 4
Fitzsimmons, C. K., Transistor replaces bleeder and regulates power supply p. 70 Jan. 22
Flores, R. A., Memories VII Weaving wires for aerospace jobs p. 131 Nov. 11
Foodman, H. W. et al, CBS nominates a convention hopeful p. 74 Aug. 19
Francis, P. A. & K. R. Whittington, Low-cost Schmitt trigger made with digital IC p. 88 Mar. 4
Franklin, D. F., Diodes prevent overload by limiting input's slope p. 69 Jan. 22
Freilich, A., Boosting op-amp output with two transistors p. 110 June 10
Frey, A. H. & R. E. Kavanaugh, Every data bit counts in transmission cleanup p. 77 Jan. 22
Fugit, B., Collector clamping improves threshold detector p. 81 Sept. 30
Gates, W. D., Vibrating angular rate sensor may threaten the gyroscope p. 130 June 10
Gay, M. J., et al, Lots of radio on just one IC p. 124 Aug. 5
Gilmartin, M. J., et al, The time-saver: FFT hardware p. 92 June 24
Girard, F. L., Finding leaky IC's on p-c boards p. 127 June 24
Glasgal, R., Dual-Quad IC gives flip-flop a fast recovery p. 86 Feb. 5
Low-distortion limiter uses IC operational amplifier p. 120 Oct. 14
Golden, F. B., Darlington transistors widen multivibrator's range p. 82 Nov. 25
Gomez, E., et al, The time-saver: FFT hardware p. 92 June 24
Gosch, J., Automated subway: Hamburger special p. 124 Aug. 19
Graunas, R. P. et al, Motor gives reverse twist to the Intelsat 3 antenna p. 71 Apr. 1
Gray, D. I., This SCR is not for burning p. 96 Sept. 30
Greenberger, H. et al, Keeping track of the action p. 92 Aug. 5
Greenlee, L. E., Bridge rectifier clips dangerous voltages p. 89 Mar. 4

Greinevitch, T. A. & M. A. Hassan, Bridge amplifier provides isolation p. 83 Sept. 30

Griem, P. D., Jr., Industrial control computers solve some problems, but cause others p. 129 May 27

Guisinger, B. & D. Johnson, Video tape recorders: longitudinal or helical scan? p. 80 Apr. 1

Gundlach, R., Ferrites' attraction is magnetic and growing p. 104 Oct. 14

Haggan, D., Tester measures resistance of multilayer p-c boards p. 100 Sept. 16

Haines, F. J., Shortcuts in tv camera design make for big cuts in price p. 134 Nov. 11

Hall, H. R., Simple method eliminates excess inductors in filters p. 58 Dec. 23, 68

Hallock, H. B., Sighting in on narrow light beams p. 106 Mar. 18

Hanneman, K., Modulation current supplied by op amp p. 107 Aug. 5

Hardie, F. H. & G. E. Simaitis, Height of sophistication in in-flight monitoring p. 78 May 13

Harkonen, T. & J. H. Kollataj, Integrated circuits in action Part 10: Linearizing signals digitally p. 112 Mar. 4

Harrison, G. W., Crystal gives precision to a stable multivibrator p. 121 Nov. 11

Harrison, T. J. & H. B. Aasnaes, Triple play speeds a-d conversion p. 69 Apr. 29

Hart, A. & J. D. Thompson, FDR: a new deal for faultfinders p. 96 Aug. 19

Haskard, D. D., Voltage sensor limits discharge in batteries p. 62 Apr. 1

Hassan, M. A. & T. A. Greinevitch, Bridge amplifier provides isolation p. 83 Sept. 30

Hayhurst, J. S., SCS outperforms UJT in relaxation oscillator p. 100 Sept. 16

Hendricks, L. V., Fast discharge reduces multivibrator's rise time p. 82 Nov. 25

Flip-flop isolates from switch bounce p. 84 Aug. 19

Henkel, R. W., Intelsat 4 countdown nears zero p. 139 June 24

Hetterscheid, W., All-solid state design overtakes large-screen monochrome tv sets p. 104 June 24

Hewlett-Packard Co. (Solid State Lab.'s staff members) Solid state module makes for light reading p. 74 Sept. 2

Hintz, L. J. & R. G. Parks, Using a universal pulser for a-c checks of IC flip-flops p. 120 May 27

Hoisington, D. B., Oscillator as detector p. 95 Mar. 18

Horn, G. W., Feedback reduces bio probe's input capacitance p. 97 Mar. 18

Horrigan, E. W., Ohmmeter and diode measure dwell angle p. 105 Aug. 5

Howden, P. F., RC-biased Schmitt trigger times pulses accurately p. 64 Apr. 1

Hoyler, R. C., Bridge and transistor are exclusive-or gate p. 88 Aug. 19

Iizuka, K., Making it in pictures p. 130 Apr. 15

Ishii, T. K. et al, Calculating Gunn-diode output p. 148 Nov. 11

Jaskolski, S. V. et al, Calculating Gunn-diode output p. 148 Nov. 11

Johnson, D. & B. Guisinger, Video tape recorders: longitudinal or helical scan? p. 80 Apr. 1

Jordan, W. F., MOS arrays come on strong p. 54 Dec. 23, 68

Juett, D. A., A pulse every millisecond is Rx for hysteresis ills p. 63 Apr. 1

Julitz, W. H. et al, Super-ECL speeds signals p. 124 Oct. 14

Karpowich, F. W. & J. T. Finnell Jr., Guidelines for radiation testing p. 122 June 10

Skipping the hard part of radiation hardening p. 122 Mar. 4

Kaskinen, P. J., Differential amplifier governs magnetic brakes and clutches p. 75 May 13

Kaufman, A. B., Memories shot from guns p. 98 Feb. 5

Kavanaugh, R. E. & A. H. Frey, Every data bit counts in transmission cleanup p. 77 Jan. 22

Kilborn, P. & P. J. Schuyten, French firm enters U.S. market for nuclear instrumentation p. 157 May 27

Killian, J. D. et al, Motor gives reverse twist to the Intelsat 3 antenna p. 71 Apr. 1

Kinsel, T. S., Light waves of the future: optical pcm p. 123 Sept. 16

Kisslinger, J., Pulse generator is supply and temperature independent p. 106 May 27

Klahn, R. & R. R. Shively, FFT—shortcut to Fourier analysis p. 124 Apr. 15

Klahn, R. et al, The time-saver: FFT hardware p. 92 June 24

Klein, R. et al, Lighting up in a group p. 104 Mar. 4

Klinikowski, J. I., Transistor speeds up charging circuit p. 105 Aug. 5

Knighton, R. W., Single transistor rectifies agc signal p. 90 Jan. 8

Kobylarz, T., Cutting noise in data sampling p. 70 May 13

Kollataj, J. H. & T. Harkonen, Integrated circuits in action Part 10: Linearizing signals digitally p. 112 Mar. 4

Kootsey, J. M., FET and IC keep oscillator linear p. 84 Aug. 19

Kornstein, E. & H. Wetzstein, Blue-green light-powered light extends underwater visibility p. 140 Oct. 14

Kronenberg, M. et al, CBS nominates a convention hopeful p. 74 Aug. 19

Kureck, J. J. & J. L. Turnbull, Memories III Smaller cores, bigger challenge p. 112 Oct. 28

Lamb, T., Transistor and relay regulate high voltages p. 70 July 22

Lancaster, D.E., For low cost, count on RTL p. 74 Jan. 22

Law, C. & B. Shockett, Bell Canada's R&D arm develops reach p. 125 May 13

Lee, P.M. et al, Super-ECL speeds signals p. 124 Oct. 14

Lehmann, A.T., Squelch gate reduces amplifier's standby gain p. 83 Dec. 9

Lehner, L.L., A discrete transistor that's a powerhouse p. 105 Feb. 19

Lior, D., Photographic printer controlled by UJT-SCR timer p. 96 Mar. 18

Litton, C.W. & Y.S. Park, Storing light and current in crystals p. 104 July 8

Longo, T.A., IC processing: healthy, still growing p. 82 Oct. 28

Maenpaa, J.H. et al., Computer-aided design Part 13: Defining faults with a dictionary p. 64 Jan. 22

Magasiny, I.P., Airborne military transceiver finds room in crowded spectrum p. 133 Apr. 15

Magee, W.A., Stretching video pulse keeps indicator on p. 90 Mar. 4

Maguire, J.T. & A.J. Schnabolk, Sorting out the tires p. 125 Mar. 18

Mammano, R., Computer-aided design Part 14: Start with a practical IC model p. 94 Mar. 4

Marr, G.R. Jr. & L.G. Noronha, Three-way dialogue yields solutions in depth p. 86 Sept. 30

Maxwell, M.G., Cameras that wink can produce 3-D tv p. 132 Mar. 18

Mayle, A.J., Shunt regulator provides dual output voltages p. 121 Oct. 14

McMann, R.H. et al, CBS nominates a convention hopeful p. 74 Aug. 19

Meier, D.A., Memories VI Rods look like wires, act like cores p. 128 Nov. 11

Meltzer, A., Activating the passive RC network p. 114 May 27

Meltzer, A. & L. de Pian, Active filters Part 3: Negative-impedance converters p. 74 Sept. 2

Part 4: Approaching the ideal NIC p. 105 Sept. 16

Miles, W.B., Gated semiconductors clean a-c switching p. 105 May 27

Mittleman, J., Active filters Part 1: The road to high Q's p. 109 May 27

Mogensen, P. & W. Chan, MOS multiplexer switches can do well at high frequencies p. 152 Nov. 11

Moore, D.W., Memories II Scant room for improvement p. 109 Oct. 28

Moore, R. et al, CBS nominates a convention hopeful p. 74 Aug. 19

Moore, R.M., Semiconductor gages make sense in most transducer applications p. 109 Mar. 19

Morant, G.D., Grounded-base amplifier mates npn to pnp p. 89 Feb. 5

Op amp boosts pick-up voltage p. 108 Aug. 5

Moroney, W.J., Microwave IC's Part 1: New problems, but newer solutions p. 100 Jun. 10

Moschytz, G.S. & R.W. Wyndrum Jr., Active filters Part 5: Applying the operational amplifier p. 98 Dec. 9

Mosher, S.L., FET oscillator helps dolphins understand people p. 85 Feb. 5

Moskowitz, C., IC testing tries to keep up with gains in IC technology p. 88 May 13

The twain meet in new scope NP p. 177 May 27

Murphy, J.J., Parallel-T filter produces voltage gain p. 103 Sept. 16

Murray, L.A. et al, Lighting up in a group p. 104 Mar. 4

Myers, C.F. & F.J. Barone, Getting Beneath the surface of multilayer IC's p. 84 July 22

Najman, A. et al, Here's a good switch: radiation-resistant thyristors p. 65 Apr. 1

Noily, J.H. et al, Keeping track of the action p. 92 Aug. 5

Norman, R.H., Memories I Staying ahead of the game p. 106 Oct. 28

Noronha, L.G. & G.R. Marr, Jr. Three-way dialogue yields solutions in depth p. 86 Sept. 30

Ogden, A. D., Schmitt trigger built from a logic IC p. 84 Aug. 19

Ogilvie, A.G., Capacitor slows down stabilized power supply p. 123 Nov. 11

O'Loughlin, J.F., PDP-8/I: bigger on the inside yet smaller on the outside p. 92 Sept. 16

Osborne, W.E., Sine-wave inverter prevents interference p. 104 May 27

Oshiro, G. S., Two IC comparators improve threshold converter p. 59 Dec. 23, 68

Owen, R.P., Rule of thumb for ripple calculations p. 87 Aug. 19

Padwick, G. C., Dynamic IC testing made easy p. 74 Sept. 30

Page, D. & P. Brody, Flexible thin-film transistors stretch performance, shrink cost p. 100 Aug. 19

Paisner, W. et al, Zener simulates muscle signals p. 111 June 10

Park, Y.S. & C.W. Litton, Storing light and current in crystals p. 104 July 8

Parkinson, G., Manana is today in Mexico p. 185 Nov. 11

Mexico nears finish line in the first Olympic event p. 95 Apr. 1

Parks, R.A., Reversed-polarity triode measures insulation p. 87 Feb. 5

Parks, R. G. & L. J. Hintz, Using a Universal pulser for a-c checks of IC flip-flops p. 120 May 27

Payne, J.M., Zeners and SCR fire gas discharge tube p. 71 July 22

Payne, S., Budget trims some space programs p. 117 Jan. 22

Penn, T. C., High-precision preamp built from 3 transistors p. 58 Dec. 23, 68

Perry, W., For Taiwan, a changing image p. 165 June 10

Petit, J. et al, CBS nominates a convention hopeful p. 74 Aug. 19

Phillips, Bob, Transistor and zener protect series regulator p. 92 July 8

Phillips, C.D., et al, Super-ECL speeds signals p. 124 Oct. 14

Phillips, G.R., FET voltmeter reads transients p. 109 June 10

Pitzalis, O., Jr., Power transistor's r-f gain measured by brief pulse p. 105 Apr. 15

Rabinow, J., Reader welcomes characters who make a bad impression NP p. 153 Oct. 28

Rausch, H., Soviet computer program has as many downs as ups p. 165 Mar. 18

Reichard, T.E., Through thick and thin with infrared beams p. 101 Mar. 18

Reick, F.G., Through a glass brightly p. 95 Feb. 5

Riley, W.B., Memories: practice and promise p. 105 Oct. 28

Pacing ultrahigh-speed computers p. 165 Mar. 4

Punched cards on the ropes? NP p. 193 Apr. 15

Third-generation small computer to make its debut in December p. 147 Sept. 30

Ristad, C.H., Resonance effects yield in-circuit capacitance checks p. 119 Oct. 14

Rosenblatt, A., Accelerometer has cut-rate price NP p. 185 June 10

FAA readies new checkout system p. 127 Feb. 5

Potential of phased-array increasing R&D activity p. 94 Sept. 2

Testing on the wing p. 81 Apr. 29

Ross, G. W., Devising industrial control systems p. 132 Oct. 14

Rusert, R.B. & H. Clauson, Isolation problems get an airing p. 75 Apr. 29

Samelson, H., Liquid lasers: promising solutions p. 142 Nov. 11

Sander, D.E., Adding a transformer halves uhf frequencies p. 87 Mar. 4

Sarkar, B., India bids for self-sufficiency p. 117 Sept. 2

Schiff, P., Ballasting a mercury-arc lamp with a solid-state circuit p. 130 Aug. 5

Voltage adjustment extends multivibrator's pulse width p. 82 Sept. 30

Schnabolk, A. J. & J. T. Maguire, Sorting out the tires p. 125 Mar. 18

Schroeder, J.O., Transistor increases zener's power capability p. 99 Sept. 16

Schuyten, P.J., Utilities go slow on automation p.125 Sept. 30

Schuyten, P.J. & S.W. Fields, Signal gains for electronic music p. 93 Apr. 29

Schuyten, P.J. & P. Kilborn, French firm enters U.S. market for nuclear instrumentation p. 157 May 27

Shapiro, S., Choosing a simulation system p. 91 Sept. 30

Shimada, S., Setting the stage for flat-screen tv. p. 92 Apr. 15

Corrections p. 28 May 27

Shively, R.R. & R. Klahn, FFT—shortcut to Fourier analysis p. 124 Apr. 15

Shively, R.R., et al, The time-saver: FFT hardware p. 92 June 24

Shockett, B. & C. Law, Bell Canada's R&D arm develops reach p. 125 May 13

Siam, T.W., Tunnel diode speeds pulse frequency modulation p. 73 Jan. 22

Simaitis, G.E. & F.H. Hardie, Height of sophistication in in-flight monitoring p. 78 May 13

Simister, W., SCR helps video signal gate a-c power line p. 66 Apr. 29

Simon, E. et al, Here's a good switch: radiation-resistant thyristors p. 65 Apr. 1

Sims, S.D. & L. Waszak, Charting a simpler approach to lasers p. 90 Aug. 19

Singleton, R.S., No need to juggle equations to find refection—just draw three lines p. 93 Oct. 28

Skilling, J., Wider frequency range for relaxation oscillator p. 91 Oct. 28

Skingley, J. A. et al, Lots of radio on just one IC p. 124 Aug. 5

Skole, R., FCC begins to get the message p. 153 Jan. 8

Federal outlets tough for foreigners p. 119 Dec. 9

Programming executives for overseas p. 183 Oct. 14

Recruiters flock to Negro colleges p. 135 July 8

Skopal, T.E., Transistor circuit cancels inductive load effects p. 83 Dec. 9

Smith, C.W. et al, CBS nominates a convention hopeful p. 74 Aug. 19

Snyder, R.S. & A.C. Eberle, Power multivibrator gives linear motion to control rods p. 69 July 22

Sogge, R.G. et al, Nova can't lose its instructions p. 76 Dec. 9

Spofford, W.R. Jr., Unlocking the gates for UJT's p. 56 Apr. 1

Spofford, W.R. Jr. & R.A. Stasior, A switch in time p. 116 Feb. 19

Stahl, W.J. et al, computer-aided design Part 13: Defining faults with a dictionary p. 64 Jan. 22

Stasior, R.A. & W.R. Spofford Jr., A switch in time p. 116 Feb. 19

Stehman, C.J. et al., Computer-aided design Part 13: Defining faults with a dictionary p. 64 Jan. 22

Stover, H.L., Fabrication advances boost potential of avalanche diode p. 96 July 8

Studebaker, J.K., Current limiter improves power supply p. 122 Nov. 11

Sucker, MC., Lots of radio on just one IC p. 124 Aug. 5

Tarui, Y., IC's in Japan—a closeup p. 98 May 13

Tatum, J. G., Fingers in the die p. 93 Feb. 19

Teixeira, James, Diodes in a multivibrator lesson frequency variations p. 93 July 8

Thomas, T. J., Automating all along the line p. 88 Nov. 25

Thompson, J. D. & A. Hart, FDR: a new deal for faultfinders p. 96 Aug. 19

Turnbull, J. L. & J. J. Kureck, Memories III Smaller cores, bigger challenge p. 112 Oct. 28

Ulrick, C. J., Differential amplifier uses two IC's p. 120 Nov. 11

Vogel, P., Semiconductor firms' captive lines capture defense contractors' fancy p. 129 July 8

Volkov, P., Inexpensive SCR regulator for consumer equipment p. 88 Feb. 5

von Recklinghausen, D. R., FET converter is self-oscillating p. 62 Dec. 23, 68

Wagner, G. D., Curve tracer tests logic IC quickly p. 98 June 24

Wajer, B. M., Zener power supply answers current problem p. 71 Jan. 22

Warner, R. C., Doppler navigation system is redesigned from a to d p. 78 July 22

Warning, W. et al, Zener simulates muscle signals p. 111 June 10

Waszak, L. & S. D. Sims, Charting a simpler approach to lasers p. 90 Aug. 19

Waxman, A., Thin-film transistors don't have to be drifters p. 88 Mar. 18

Welling, Brent, Boosting color tv's i-f performance p. 130 Mar. 4

Wenz, R. C., Synchronizing a camera with a flash tube p. 119 Nov. 11

West, J. L., Two-step process speeds low-frequency measurements p. 123 May 27

Wetzstein, H. & E. Kornstein, Blue-green light-powered light extends underwater visibility p. 140 Oct. 14

Whittington, K. R. & P. A. Francis, Low-cost Schmitt trigger made with digital IC p. 88 Mar. 4

Widiar, R. J., Linear IC's Part 6: Compensating for drift p. 90 Feb. 5

Wilson, R. A., SCR synchronizes gate p. 95 Mar. 18

Winder, R. O., Threshhold logic will cut costs, especially with boost from LSI p. 94 May 27

Winkler, J., Russia—an open market p. 126 Dec. 9

Wintress, G. V., IC gate controls triac with audio transformer p. 106 Aug. 5

Wolff, H., CAI edges slowly into the classroom p. 163 Aug. 5

Electronic traffic control: can it make the grade? p. 157 Apr 15

Off to the wars—again p. 121 Feb. 5

Speeding diplomacy's messages p. 173 June 10

Woody, R. F. Jr., Putting electronic organs in tune with natural sound p. 100 June 24

Wright, M. J., Transistor replaces resistor and improves amplifier p. 92 Jan. 8

Wyndrum, R. W. Jr. & G. S. Moschytz, Active filters Part 5: Applying the Operational amplifier p. 98 Dec. 9

Younge, D. R., Bootstrapping bias supply increases IC voltage capacity p. 90 Oct. 28

Zilberstein, R. M., Reed switches form a nonmechanical lock p. 92 Oct. 28